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Environmental & Geological Services, Inc.

ENVIRONMENTAL SITE ASSESSMENT

New Mexico Salt Water Disposal Company, Inc.
Station #11
Unit Letter D, Section 21 Township 10 South Range 34 East
Lea County, New Mexico

Prepared For:
New Mexico Salt Water Disposal Company, Inc.
PO Box 1518
Roswell, New Mexico 88202-1518

Prepared by:
CMB ENVIRONMENTAL & GEOLOGICAL SERVICES INC.
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Clayton M. Barnhill, P.G.
Certified Scientist # 246 - New Mexico State Environment Department
Petroleum Storage Tank Bureau
State of Texas Professional Geologist # 6121

Clayton M. Barnhill, Project Manager
PROJECT NO. 2003/NMSWDCO/10/01
April 1, 2004

CMB

Environmental & Geological Services, Inc.

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New Mexico Salt Water Disposal Company, Inc.
Attn: Mr. John Maxey
PO Box 1518
Roswell, New Mexico 88202-1518
(505) 625-0266
read@lookingglass.net

Re: Environmental Site Assessment
New Mexico Salt Water Disposal Company, Inc.
Station # 11 Tank Battery
Unit Letter D, Section 21,
Township 10 South, Range 34 East
Lea County, New Mexico

Dear Mr. Maxey:

Our report presenting the findings of the Environmental Site Assessment of the above referenced property is presented herein. This report includes discussions concerning our assessment methods, the scope of work performed, and a description of soil and groundwater conditions, including regulated materials or conditions that may exist on site. CMB Environmental & Geological Services, Inc. recommends that no further action be taken on the property. If necessary, fate and transport modeling of chloride concentrations present in existing soil conditions, using SEVIEW 6.2 fate & transport modeling software, will confirm that present conditions that exist on site, and characterized in this report, are of no future threat to groundwater, human health, or habitat.

If you have any questions during your review of this report please contact us at your convenience.

Sincerely,

Clayton M. Barnhill, PG
CMB Environmental & Geological Services, Inc.

4 copies : NMSWDCO

TABLE OF CONTENTS

TABLE OF CONTENTS, CONTINUED:

FIGURES

APPENDICES

EXECUTIVE SUMMARY

As authorized by New Mexico Salt Water Disposal Company, Inc. (CLIENT), CMB Environmental and Geological Services, Inc., has completed a Environmental Site Assessment (ESA) of a site, known as the New Mexico Salt Water Disposal Company Station 11, located in unit D of Section 21 T.10S. R.34 E., Lea County, New Mexico.

This practical and reasonable ESA was performed in conformance with the scope and limitations of American Society of Testing and Materials (ASTM) Practice E 1527-97 and the ESA scope of services generally required and appropriate therein.

The following environmental conditions were observed during the course of this investigation:

1.) All soil borings were set up over the surface area where the reported produced water spill occurred from a leak or leaks from on-site produced water storage tanks or tank battery flow lines.

2.) Soil borings were mechanically drilled with a hollow stem auger rotary rig equipped with a continuous 2' foot split spoon sampling barrel. Samples were collected by a professional geologist and analyzed by a certified environmental analysis laboratory. Soil testing was performed by a professional soils testing laboratory. The mechanical drilling was performed by professional environmental drilling company.

3.) A 1000 PPM Total Petroleum Hydrocarbon (TPH) concentration threshold, established by the New Mexico Oil Conservation Division, was used. Groundwater is estimated to be less than 100' feet below ground surface at the site. No significant TPH or BTEX contamination was found on site.

4.) At a depth of 29' - 36' feet below ground surface at the site; a fat non-porous and non permeable clay unit underlies the surface unconsolidated sand and clayey sands. Measured effective porosity of this clay unit is 5.5%, measured Hydraulic Conductivity = 1.5E-08 cm/sec, measured intrinsic permeability = 1.5E-13 cm2.

5.) There is some chloride contamination on-site, most borings showed a minor amount of chloride soil concentrations in soil samples to a depth of 9' feet below ground surface. There are no areas of visible stressed vegetation. At depths greater than 9' feet below ground surface chloride concentrations in soil samples were greater with the highest

concentrations collected on the top of the clay unit. This chloride contamination is of no threat to the groundwater as it would be difficult for the chloride concentrations to migrate through the clay zone found at 29' feet below ground surface. A perched water zone, resting on top of this clay barrier / aquitard, was encountered in soil boring 4A. The perched water was sampled and did not contain any hydrocarbons or metals but contained a strong concentration of chloride. The existence of this perched water indicates that the clay zone is impermeable and the soil sample of the clay immediately below the chloride rich perched water did not reflect a significant chloride concentration increase as a result of the perched water penetrating and enriching the soil chloride concentration of the clay zone.

It would not be prudent environmental practice to penetrate this clay zone / aquitard with a soil boring or monitor well, opening up the possibility to contaminate the water bearing Ogallala sand formations below by adding a potential conduit through this aquitard.

6.) *The New Oil Conservation Division does not have a soil standard for chloride contamination. However, the drinking water standard of 250-mg/l chloride is often mistakenly used as a soil standard.*

7.) The possibility of off-site migration of the defined soil chloride concentrations is remote. Chloride fate and transport modeling using SEVIEW 6.2 modeling software could facilitate a risk based corrective action analysis of the site. This analysis could be performed on this site to assess the *"true risk"* of this release or previous releases affecting human health and habitat. *By assessing the true nature of the risk to human health from this release or previous releases, a determination can be made as to what level of corrective action should be obtained, if any.*

1.0 INTRODUCTION:

1.1 Purpose:

The New Mexico Salt Water Disposal Company Station # 11, is located in unit letter D of Section 21, Township 10 South, Range 34 East, Lea County, New Mexico.(See Figure 1) New Mexico Salt Water Disposal Company, Inc., of Roswell, New Mexico, is the operator of the salt water disposal facility.

On July 12, 1999, a routine / periodic field inspection was conducted by the New Mexico State Land Office concerning alleged surface damages on State of New Mexico grazing lease GS-0928 leased by the Johnson family with Diamond & Half Ranch. New Mexico Salt Water Disposal Company operates an extensive saltwater disposal system across a large portion of the ranch. Several alleged saltwater leaks have occurred over the past few years. The areas of this inspection were addressed in a report labeled LA-SA145 by the New Mexico State Land Office.

On July 27, 1999 New Mexico Salt Water Disposal Company, Inc. received a certified letter from Mr. Ray Powell, the Commissioner of Public Lands for the State of New Mexico, which reiterated: *"it has come to our attention that certain unacceptable damages to the surface exist on the above described oil and gas lease. (Salt Water Gathering and Injection Disposal System, Sections 18, 21, and 28, Township 10 South, Range 34 East, Lea County, New Mexico) The State Land Use Specialist has indicated there are areas of salt water pipeline repairs that have not been properly backfilled and compacted. Also, the earthen spill containment berms surrounding the salt water disposal well and associated tanks should be reworked and higher walls should be constructed in order to capture any leaks that may occur. All non-functional or non-operational equipment and surface trash and debris needs to be removed from the lease, and areas of surface damage from salt water and oil spills needs to be reclaimed and or remediated. These items of concern could potentially cause harm to the livestock grazing in the area and may also hamper the re-vegetation of native grasses that exist in the area."*

On September 29, 1999 a field inspection of the areas addressed in report LA-SA145, was conducted by Mr. Leon Anderson, Land Use Specialist of the New Mexico State Land Office, Mr. John Maxey and Mr. Clarence Massey of New Mexico Salt Water Disposal Company, and Mr. Justin Johnson, the ranch owner. Each site was visited and discussed. This field inspection was documented and confirmed in a follow up letter to report LA-SA145, dated October 1, 1999, to Scott Dawson, of the New Mexico State Oil, Gas, and Minerals Division and Jim Norwick, of the New Mexico State Land Office, *"documenting the seven areas of concern found on New Mexico State grazing lease GS-0928. A consensus was reached where all parties were agreeable to the following recommendations:*

1.) All berms around Salt Water Disposal Wells (SWD) and Tanks would be repaired as needed.

2.) All non-functional pipe and fittings, fasline, PVC, and steel pipe, etc., would be removed and stored within fenced storage areas and not on the surface.

3.) The remaining ½ mile of PVC line, located in section 19, of T10S R 34 E, would be replaced with SDR Poly Fasline. The new line will be buried 1" inch to 3" inches of cover if possible.

4.) All exposed PVC lines would be covered.

5.) All areas between Section 21 SWD well and Pump Station #8 and Pump Station #11 would be covered where repairs were made and left uncovered.

6.) A Monitor well may be needed and placed just east of the SWD Pump Station #11 berm area in Section 21, T.10S. R34E.

7.) The material inside the berm at SWD Pump Station #11 may need to be looked at. This is due to the amount of material that has overflowed the storage tanks.

On April 17, 2003 a volume of 20 barrels of produced water was released from the storage tanks at NMSWDCO Station #11 and was contained inside the bermed area surrounding the tank battery. This release was immediately reported to the New Mexico State Department of Energy, Minerals, and Natural Resources Oil Conservation Division District 1 Office, located in Hobbs, New Mexico. New Mexico Salt Water Disposal Company, Inc filed, with the NMOCD, a form C-141 release notification. After the discharge, New Mexico Salt Water Disposal Company, Inc. immediately ordered and installed three new 1000 barrel fiberglass tanks to replace the older steel tanks at NMSWDCO Station # 11. The berm surrounding the tanks was also upgraded at this time.

Between July 1999 and October of 2003, New Mexico Salt Water Disposal Company complied with all the above recommendations with the exception of installing a monitor well at NMSWDCO Station #11.

On June 2, 2003, New Mexico Salt Water Disposal Company, Inc. received a letter from Mr. Joseph R. Lopez, of the New Mexico State Land Office that stated: "*This office has been notified by our field operating division that you are operating a salt water disposal operation with the NW ¼ of the NW ¼ of section 21, Township 10 South, Range 34 East. Be advised that this operation is in trespass. In order to bring this operation into compliance we will require you to obtain a business lease for the site and a salt water disposal easement. Penalties dating back to the initial time of trespass will also be assessed*

including back rental. Also reported is the fact that numerous problems exist with the facility that must be corrected. Apparently this has been an ongoing issue since 1999. Our field staff has determined that the following requirements be met in order to correct the problems:

1.) A new storage tank and pumping facility be built with an impermeable liner beneath the tank area and berm, with the berm of sufficient size to contain 1.5 times the capacity of the tank or tanks.

2.) A ground water assessment be conducted to determine the contamination.

3.) If ground water contamination exists, treat and restore to Water Quality Control Commission Standards.

4.) That the surface be remediated by removing contaminated soils and replacing with clean soils.

5.) A monitoring well be installed.

To initiate the site modifications and remediation, contact our Environmental Specialist, Cody Morrow." (For correspondence see appendix 1.)

CMB Environmental & Geological Services, Inc. conducted a subsurface investigation of the soil affected by this release adjacent to the tank battery at NMSWDCO Station # 11. The ESA was conducted for New Mexico Salt Water Disposal Company, Inc., of Roswell, New Mexico, the operator of the property. The investigation was conducted to determine the lateral and vertical extent of the alleged contamination caused by this April 17, 2003 release of water from the tank battery / produced water storage facility.

1.2 Limitations and Exceptions of Assessment:

"Recognized environmental conditions" as defined in this ESA report document, mean the presence or likely presence of any hazardous substances or petroleum products on the site under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into the ground, ground water, or surface water of the site. This term is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The findings and conclusions of this ESA are based upon:

1) Research and evaluation of readily available documents and databases.

2) Interviews with persons knowledgeable about the Site:

3) Site reconnaissance, soil boring investigations, soil sample description and analysis by an environmental professional, and sample analysis by a qualified environmental analysis laboratory.

CMB Environmental and Geological Services, Inc., makes no warranty, expressed or implied, as to the accuracy or completeness of the information provided by the various governmental regulatory agencies and other referenced information sources used during this ESA. This ESA is for the sole use of the Client and may not provide adequate information for other purposes or parties. The information contained in this report including all figures and attachments, may not be used any other party without the expressed consent of New Mexico Salt Water Disposal Company, Inc.(NMSWDCO)

CMB Environmental & Geological Services, Inc. (CMB) has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. CMB also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

1.3 Summary of Field Activities:

A workplan addressing the environmental concerns of the site was created by CMB Environmental & Geological Services Inc. and submitted to New Mexico Salt Water Disposal Company, Inc. The workplan was subsequently approved by the New Mexico State Land Office (NMSLO) on August 18, 2003 in a letter to New Mexico Salt Water Disposal Company (NMSWDCO) written by Cody C. Morrow, Environmental Specialist with NMSLO. The proposed work submitted in the work plan was as follows:

1.) Soil borings will be drilled near the four corners of the bermed area surrounding the salt-water storage tanks located on site. Borings will be drilled using a hollow stem auger drilling rig and sampled in 5-foot intervals using a split-spoon sampling device. Soil samples collected at these five-foot intervals will be field tested for chloride contamination using a hand-held Chemetrics titration cell for titrimetric analysis of chloride. Once the field analysis indicates that the soil concentration of the boring is 250-mg/l chloride or less, then the advancement of the boring will be terminated. A confirmation soil sample from this depth will be collected and sent to Hall Environmental Analysis Laboratory, located in Albuquerque, NM. Hall Analysis Lab will analyze this confirmation soil sample for chloride using EPA Method 9056/300. Abandonment of all soil

borings will be accomplished by backfilling with bentonite pellets from total depth to ground surface. All drilling and sampling equipment will be de-contaminated between sampling events and the drilling of the next soil boring.

2.) If all the drilled soil borings contain sampled soil that is below 250 mg/l chloride at total depth, then continuing the soil borings to groundwater will not be necessary.

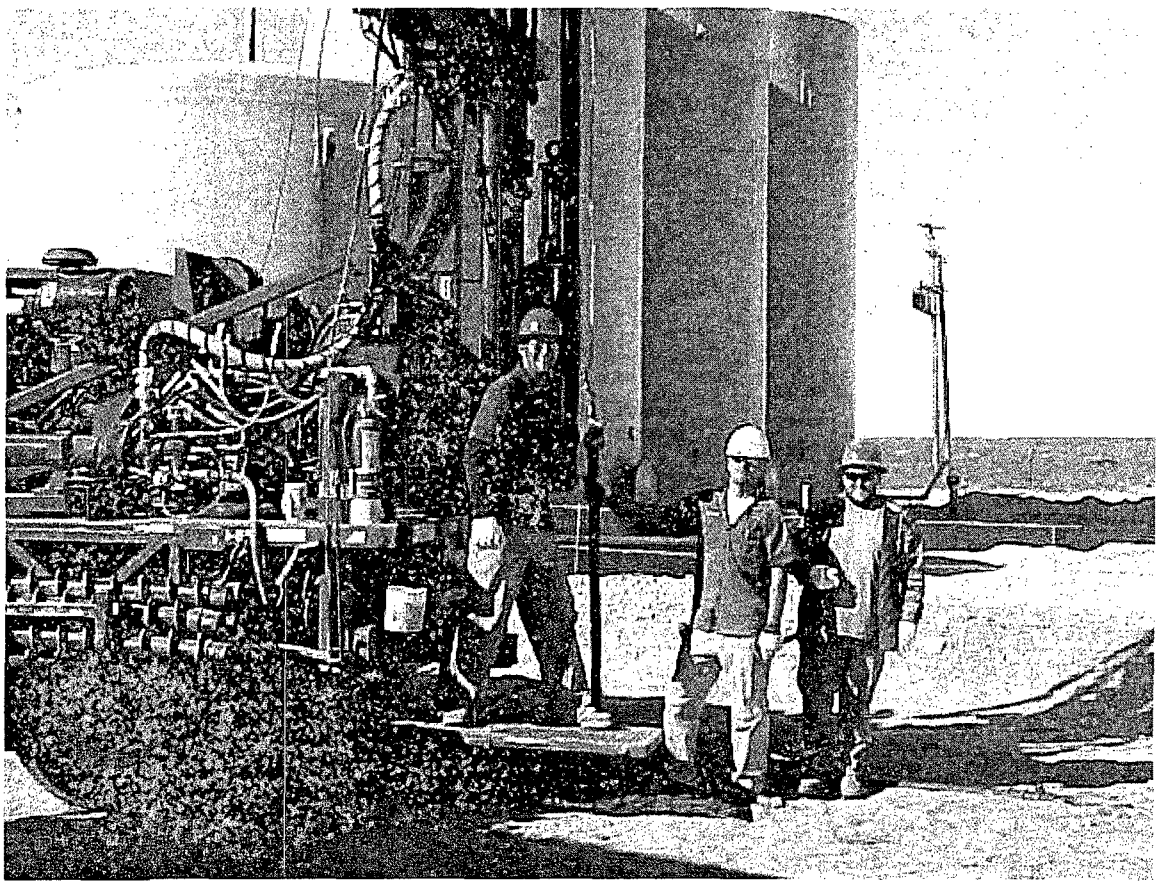
3.) Groundwater in the area of the site is estimated to be 37' feet below the ground surface. This estimated depth to groundwater was derived by CMB after a review of available groundwater data located in the New Mexico State Engineers District IV Office, located in Roswell, NM. If any of the soil borings are advanced to a depth of 30' feet below ground surface, due to chloride contamination of greater than 250 mg/l, then that boring with the highest chloride concentration, will be advanced in five foot intervals to the estimated depth of groundwater. If groundwater is encountered at the estimated depth of 37', the soil boring will be drilled ten more feet into the aquifer and a monitor well will be installed. The monitor well will be installed using New Mexico Environment Department specifications and guidelines for monitor well installation. A sample of the capillary fringe, estimated to be at 35 'feet below ground surface, of this boring will be taken and analyzed by Hall Analytical Lab for chloride. The monitor well will be developed, purged of a minimum of three well volumes, and then a water sample will be taken. Hall Analysis Lab will also analyze this water sample for chloride contamination using EPA Method 9056/300

4.) In the event that the 37' foot depth to groundwater is an incorrect estimate, then the boring with the highest chloride concentration above 250 mg/l at 30' feet below ground surface will be advanced and sampled in five-foot intervals until a chloride concentration of 250 mg/l is obtained.

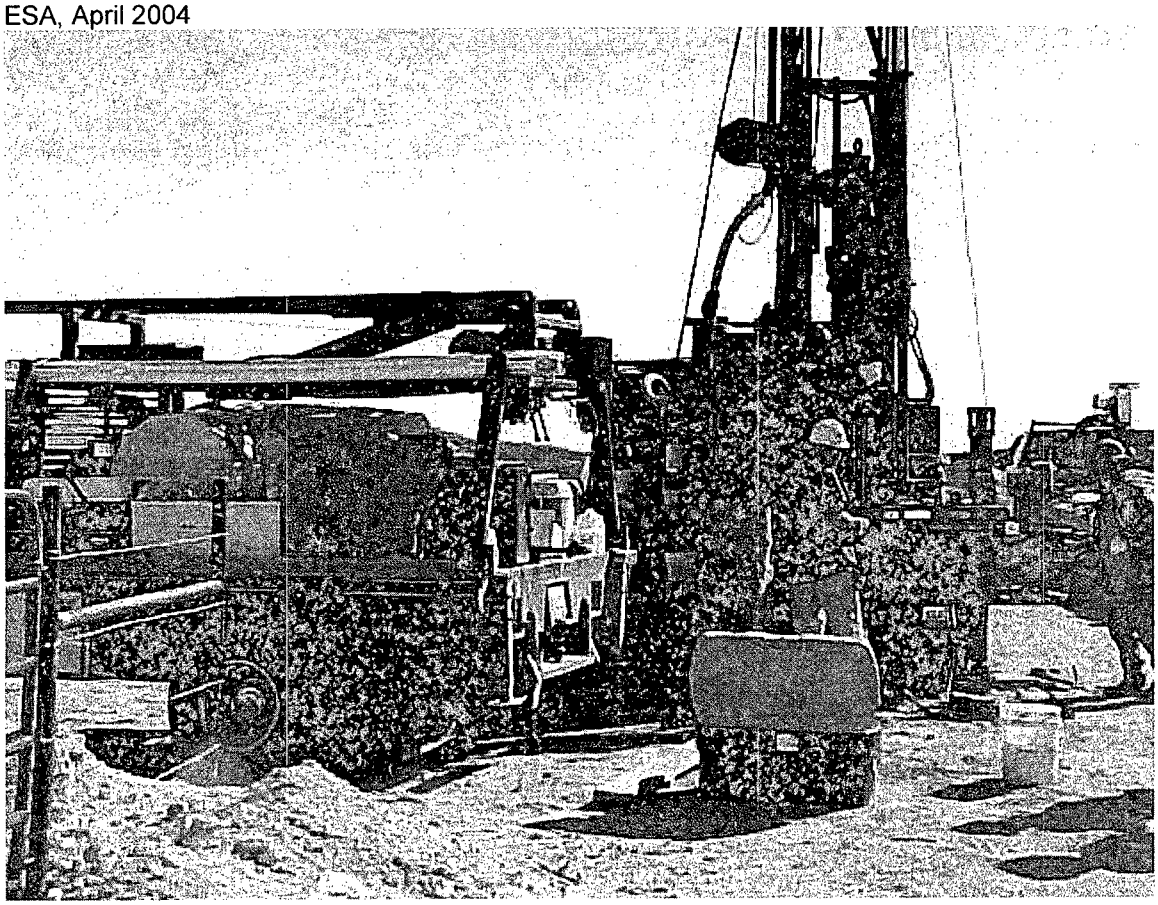
5.) CMB Environmental & Geological Services, Inc, after a review of the data collected as a result of the proposed assessment work, will submit a written report to NM Salt Water Disposal Co. detailing the results of the assessment.

On October 14, 2003 Atkins Engineering Associates, Inc. a professional environmental drilling contractor located in Roswell, New Mexico was mobilized to the site to commence drilling activities. Four soil borings were drilled ranging in depths from 11' feet below ground surface to 16' feet below ground surface. Two foot split spoon samples were taken from surface to 16' feet below ground surface in soil borings SB-2 and SB-4. Soil borings 1 and 3 were drilled to 11'

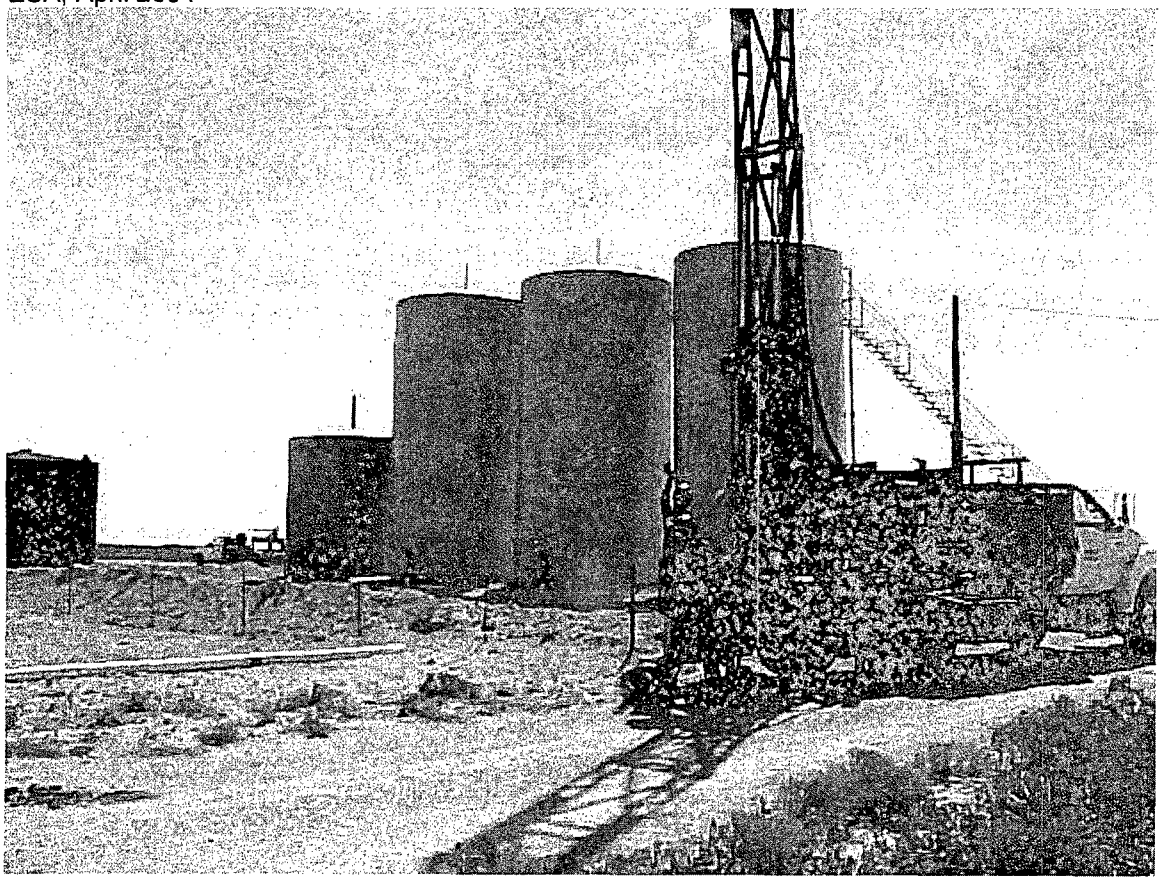
feet below ground surface. Soil samples collected from these two-foot split spoon intervals were field tested for chloride contamination using a hand-held Chemetrics titration cell for titrimetric analysis of chloride. The field analyzes by CMB Environmental & Geological Services Inc. *incorrectly* indicated that the soil concentration of the borings was 250-mg/l chloride or less, and the advancement of the borings was terminated. Confirmation soil samples from the borings were collected and sent to Hall Environmental Analysis Laboratory, located in Albuquerque, NM. Hall Analysis Lab analyzed the soil samples for chloride, Total Petroleum Hydrocarbons (TPH), and BTEX analysis. Hall Environmental Analysis Lab confirmed that there were no significant TPH or BTEX concentrations in the soil samples but some soil samples contained chloride concentrations >250mg/l. As a result, CMB Environmental & Geological Services Inc. determined that additional drilling would be necessary to define the vertical and horizontal extent of alleged chloride contamination.



Location of Soil Boring SB-1 NMSWDCO, October 14, 2003, east side of the new tank battery and reworked berm area surrounding the tank battery. Drilling Rig is Mobile Drill B-58 Owned by Atkins Engineering Associates, Roswell, New Mexico. Total Depth 11' feet below ground surface.



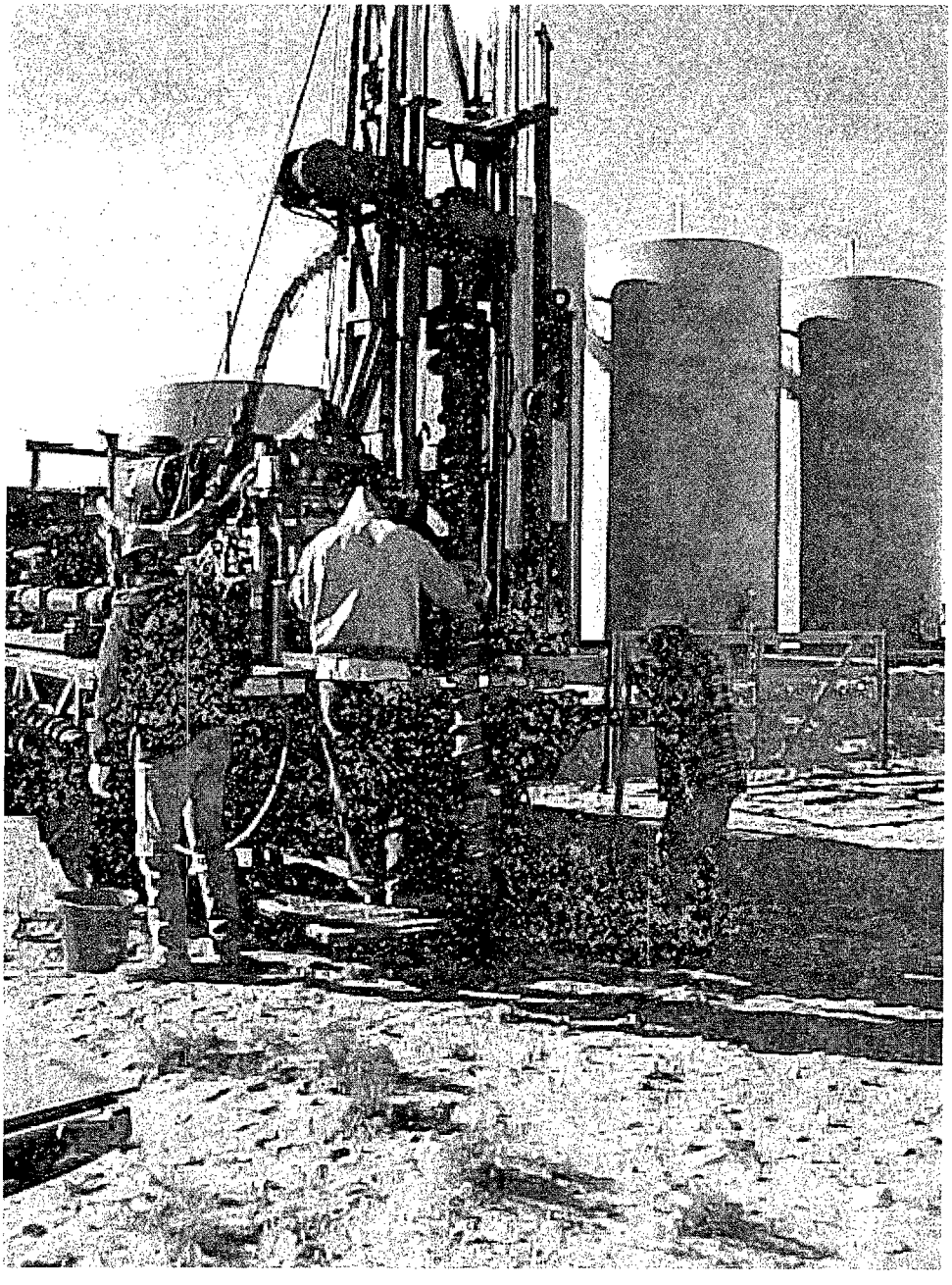
Location of Soil Boring SB-2 NMSWDCO, October 14, 2003, southeast side of tank battery. Total Depth 16' feet below ground surface.



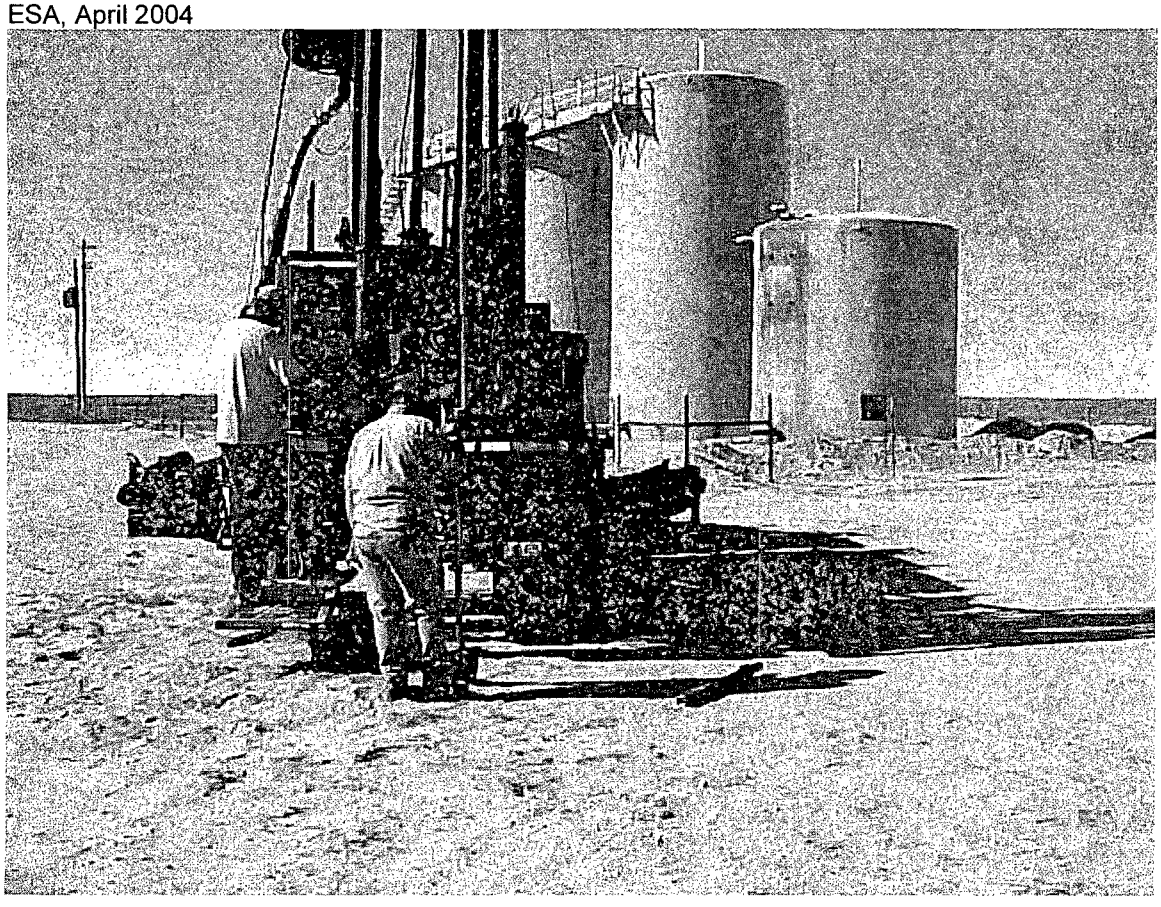
Location of Soil Boring SB-4 NMSWDCO, October 14, 2003, northwest side of tank battery. Total Depth 16' feet below ground surface. Photograph shows new produced water storage tanks and berm area at the facility.

On November 19 & 20th, 2003 Atkins Engineering Associates, Inc. was re-mobilized to the site to commence drilling activities. Four soil borings, 1A,2A,3A,&4A were drilled ranging in depths from 31' feet below ground surface to 36' feet below ground surface. Two foot split spoon samples were taken from surface to total depth in all soil borings. Confirmation soil samples from the borings were collected and sent to Hall Environmental Analysis Laboratory, located in Albuquerque, NM, for chloride, Total Petroleum Hydrocarbons (TPH), and BTEX analysis. Hall Environmental Analysis Lab confirmed that there were no TPH or BTEX concentrations but soil samples contained chloride concentrations. A clay zone was encountered from 29' -36' feet below ground surface in all soil borings. A perched aquifer was found in soil boring 4A perched on top of the clay zone at 31' feet below ground surface. The capillary fringe at 24' -26' feet below ground surface and perched water were sampled for any type of hydrocarbon, chloride, and metals. The clay zone was cored and sampled for porosity, hydraulic conductivity, and permeability soils testing. *As a result, CMB Environmental & Geological Services Inc. determined that additional drilling to the water table would be dangerous as penetrating this*

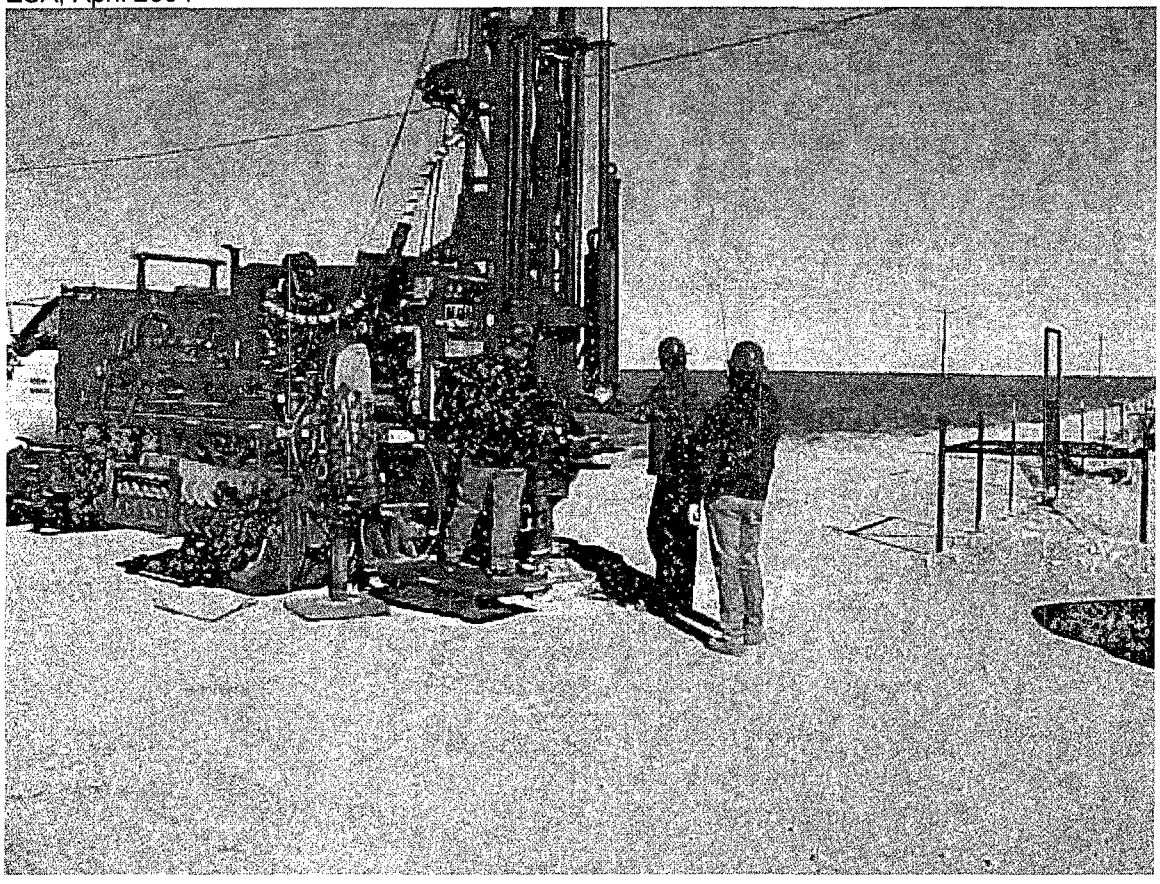
aquitard / clay zone holding this perched water, may open up a conduit for contamination to the groundwater via the soil boring if the clay zone were penetrated. (Soil boring logs, analytical data, and soil concentration contour maps are found in appendix 4.)



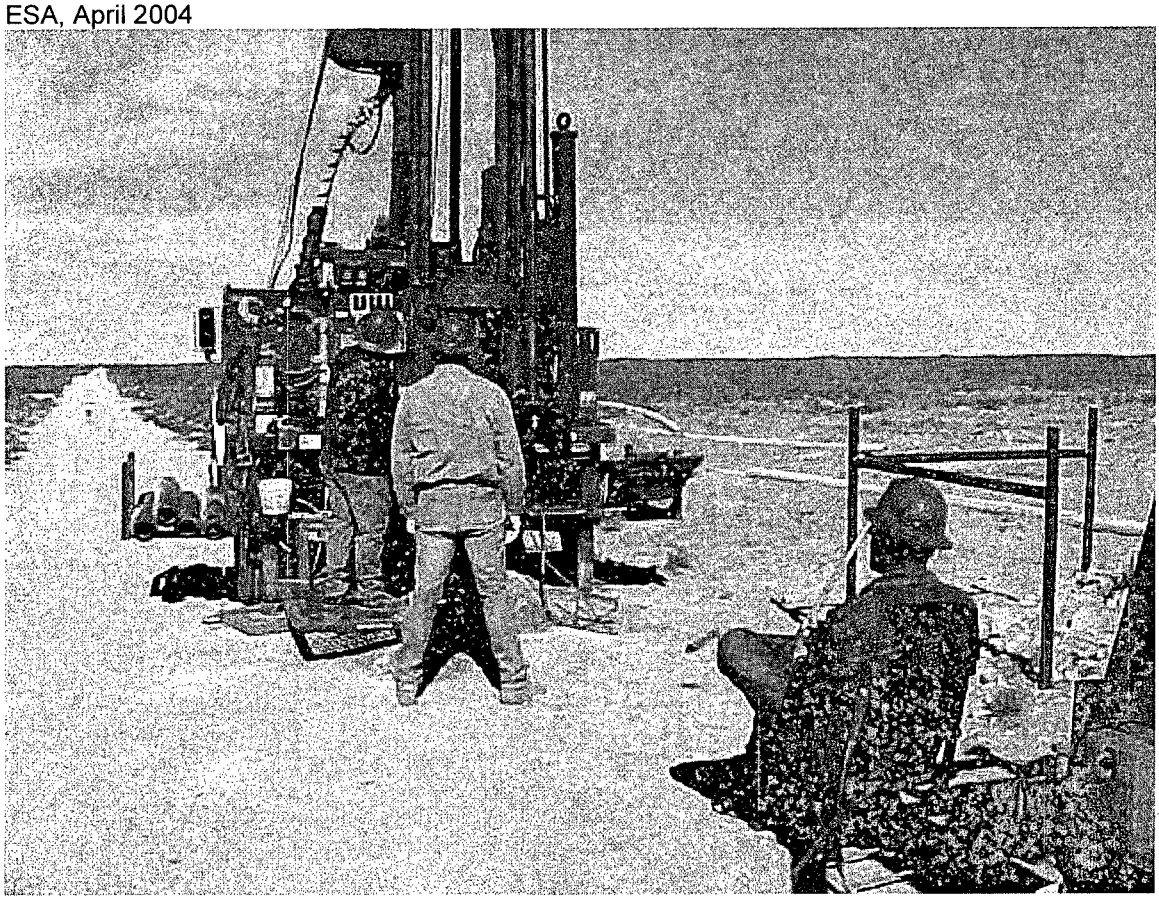
Drilling of SB-1A, northeast corner outside bermed area on 11/19/03.



Drilling of SB-2A, southeast corner outside bermed area on 11/19/03.



Drilling of SB-3A, southwest corner outside bermed area on 11/20/03. Soil borings 3 and 3A are drilled in the same location within 2' feet of each other.



Drilling of SB-4A, northwest corner outside bermed area on 11/20/03. Soil borings 4 and 4A are drilled in the same location within 6' feet of each other.

2.0 SITE DESCRIPTION:

2.1 Site Location and Legal Description:

The New Mexico Salt Water Disposal Company, Inc. Station # 11 is located in unit letter D of Section 21 of Township 10 South, Range 34 East, NMPM, Lea County, New Mexico.

2.2 Physical Setting of Site and Surface Characteristics:

To arrive at New Mexico Salt Water Disposal Company, Inc. station # 11, from Caprock, New Mexico go east on NM 380 3.15 miles to county road (black top) turn north, go 10 miles and turn east on county road (black top), go 11 miles and turn south on caliche road, go 4.3 miles to a tee in the road, turn west, go 1 mile, turn south, follow road ¾ mile to NMSWDCO Station # 11.

Soils:

According to the U.S. Conservation Service Soil Survey of Lea County, New Mexico, soils in the area of the New Mexico Salt Water Disposal Company Station # 11 are of the Brownfield Series.

"The Brownfield series consists of well-drained soils that have a thick surface layer of fine sand and sandy clay loam subsoil. They are formed in wind-deposited sands on uplands in the northern part of Lea County. Slopes are 0-3 percent. The vegetation consists of tall and arid grasses and shrubs. The average annual precipitation is 12 to 15 inches, the average annual air temperature ranges from 58 degrees to 60 degrees Fahrenheit, and the frost free season is 195 to 205 days. Elevations range from 3600 to 4400 feet. Typically, the surface layer is a light brown fine sand about 22 inches thick. The subsoil is red sandy clay loam to a depth of 63" inches. Brownfield soils are sued mostly as range, but also as wildlife habitat and recreational areas."

In the immediate area of NMSWDCO station # 11, the Brownfield-Springer association occurs.

"This mapping unit is about 60 percent Brownfield fine sand, 30 percent Springer loamy fine sand, and 10 percent inclusions of Tivoli, Gomez, Patricia, and Amarillo Soils. The landscape is one of billowy and undulating, low sand dunes intermingled with early level sandy areas. The Springer soil has moderately rapid permeability. Runoff is very slow. Water intake is rapid, and available water holding capacity is 6" to 8" inches. Roots penetrate to a depth of 60" inches and more. Soil blowing is a severe hazard."
(See Figure 3: Soil Map.)

Topography:

The general topography in the area of the NMSWDCO Station # 11 and surrounding area of Section 21, T.10.S. R. 34 E., Lea County, New Mexico is relatively flat to undulating, due to the nature of the sand dune development, with contours gently sloping to the east. Elevations range from 4220' feet ASL to 4200' feet ASL in section 21. Surface elevation of NMSWDCO Station # 11 is estimated to be 4217' feet ASL. **(See Figure 1 & 2: Topographic Maps / Satellite Image)**

2.3 NMSWDCO Station # 11 Site Geology / Hydrology:

Geology of the Site: In October and November of 2003, 8 soil borings were drilled by CMB using a contracted hollow stem auger drilling rig. From those

borings, a typical type section of the soils and rock formations located on site was constructed and is as follows:

From ground surface to 19' feet below ground surface: Tan brown to red fine-grained to medium grained, well-sorted sands. Minor caliche nodules were encountered. No Hydrocarbon odor and staining was encountered on any samples from these depths.

From 19' feet below ground surface to 29' feet below ground surface: Tan brown, clayey, medium grained to fine grained, well sorted, sand. No Hydrocarbon odor and staining was encountered in any samples from these depths.

From 29' to 36' feet below ground surface: Brown, fat, tight, clay of varying thickness exists in soil borings SB-1A through SB-4A. Soil Borings 1, 2, 3, &4 were not drilled deep enough to encounter this clay zone. All samples taken in the fat clay zone had non-detectable hydrocarbon TPH levels, Non-Detectable BTEX Levels, and reduced Chloride concentrations. A 2' foot core sample of the fat clay was sent to Daniel B. Stephens and Associates Lab, located in Albuquerque, New Mexico for initial moisture content, dry bulk density, calculated porosity, saturated hydraulic conductivity, effective porosity, and Total organic carbon content. (See Appendix 5)

Soil boring logs and soil boring field notes are provided in **Appendix 2**

Hydrology of the Site:

A search of the groundwater records of the New Mexico State Engineers District IV Office located in Roswell, NM revealed that measured first static groundwater in T.10S.R34E., Lea County, NM is between 32' feet to 50' feet below ground surface. These static water levels were measured at varous periods of time in the "Lucky Windmill" (Carl Johnson Ranch stock tank), Section 20 (43310) Townhsip 10 South Range 34 East, NMPM. Measured Chloride was between 348 and 615 PPM, Conductivity was between 1670 and 2464 SC. The total depth of this well is reported as 65' feet. The recorded of the casing is 6 5/8" inches.The screened interval of the well is unknown. The "Lucky Windmill" is ¾ mile to 1 mile southwest of the NMSWDCO Station # 11 Tank Battery, and up gradient.

Humble Oil and Refining Company drilled, in July of 1962, a boring in the SE1/4 of the SW ¼ of SE ¼ of section 36 T.10S. R.34 E . to a total depth of 290 feet below ground surface. Clay was encountered for 18' feet to 105' feet below ground surface. No significant water was encountered, and this well was plugged and abandoned.

Humble Oil and Refining Company also drilled, in July of 1962, two borings in the SE1/4 of the SW ¼ of SE ¼ of section 36 T.10S. R.34 E . to a total depth of 80' and 85' feet below ground surface. A water sand was logged at 55' feet to 70' feet below ground surface in both wells. Clay was encountered from 80' feet to 85' feet below ground surface, the total depths logged in both wells. This described water bearing sand is a possibly part of Ogallala Formation Materials that are sitting on top of Triassic Red Beds. Regional dip of the water bearing Ogallala Formation is to the east. **(See Appendix: 3)**

2.4 Known Environmental Conditions:

The soil borings were drilled at the four corners of the bermed area surrounding the produced water storage tanks. These borings were set up over the area where the alleged produced water spill or spills had occurred on the ground surface as run-off from the storage tank pad and from the bermed area surrounding the produced water storage tanks.

CMB contracted a professional environmental drilling contractor to perform this work. The drilling method selected was Hollow Stem Auger with a continuous 2' foot split spoon sampling device. The drilling program was designed to have a minimum impact on the surface conditions of the site while obtaining a maximum amount of information from the soil borings.

The first set of four borings was drilled on October 14, 2003.(Soil Borings 1,2,3, &4) The total depth of the first four borings ranged from 11' feet to 16' feet below ground surface. Initial field tests of the soil boring soil samples by CMB indicated low levels of chloride concentrations in the borings. As a result of the inaccurate low chloride concentrations determined by the field tests of the soil boring soil samples, CMB terminated the borings at a shallow depth below ground surface. Hall Environmental Analysis Laboratory's confirmation samples of these same soil samples from the initial field sampling split indicated higher chloride concentrations in the soils.

CMB determined that additional drilling was necessary to characterize the vertical and horizontal extent of the chloride soil concentrations, and if these concentrations may have impacted the groundwater. Four more soil borings were drilled at or near the four corners of the bermed area, and near the previously drilled soil borings 1,2,3,&4, to total depths ranging from 31' feet to 36' feet below ground surface. The soil borings were drilled on November 19 & 20th, 2003. (Soil Borings 1A, 2A, 3A, & 4A)

There were no significant Total Petroleum Hydrocarbon (TPH) or BTEX detected in any of the soil samples from the borings on site.

Data from all of the soil borings is described in the field notes, soil boring logs, contour maps of the Chloride concentrations, and laboratory analysis. **(See Appendices: 4, 5, & 6)**

With the first groundwater aquifer located less than 100' feet below ground surface in the area, the New Mexico State Oil Conservation Guidelines for soil contamination dictate that a level of 1000 PPM TPH concentration must be obtained in soil samples before for site closure of a leak, spill, or confirmed release from a tank battery. *There is not a soil concentration standard for chloride concentrations of soil in the State of New Mexico. A State Of New Mexico Water Quality Control Commission water quality standard of 250 mg/l or 250 PPM Chloride is sometimes mistakenly used as a soil chloride concentration standard in the State of New Mexico by the New Mexico Oil Conservation Commission.*

From data obtained in the soil borings, soil contamination greater than or equal to the 1000 PPM level TPH did not occur on site. TPH concentrations in PPM from the soil boring samples are tabled below:

Soil Boring	*Depth: 0'-2'*	*4'-6'*	*9'-11'*	*14'-16'*	*19'-21'*	*24'-26'*	*29'-31'*	*34'-36'*
SB - 1			ND					
SB - 1A	32		280	55	ND	ND	ND	ND
SB - 2	170	ND	ND	ND				
SB - 2A	ND		ND	ND				
SB - 3			ND					
SB - 3A	ND	ND	ND					
SB - 4	ND	ND	ND	ND				
SB - 4A	ND	ND	ND				ND(H2O)	

From data obtained in the soil borings, BTEX soil contamination did not occur on site in any significant concentrations. BTEX concentrations in PPM from the soil boring samples are tabled below:

Soil Boring	*Depth: 0'-2'*	*4'-6'*	*9'-11'*	*14'-16'*	*19'-21'*	*24'-26'*	*29'-31'*	*34'-36'*
SB - 1			ND					
SB - 1A	ND		0.3	ND	ND	ND	ND	ND
SB - 2	ND	ND	ND	ND				
SB - 2A	ND		ND	ND				
SB - 3			ND					
SB - 3A	0.03	ND	ND				ND	
SB - 4	ND	ND	ND	ND				
SB - 4A	ND	ND	ND				ND(H2O)	

Chloride concentrations in PPM from the soil boring samples are as tabled below: (Red Values indicate greater than 250 PPM Chloride Concentration)

Soil Boring	Depth: 0'-2'	4'-6'	9'-11'	14'-16'	19'-21'	24'-26'	29'-31'	34'-36'
SB - 1			1800					
SB - 1A	120		380	1900	1800	3700	5000	2000
SB - 2	330	580	500	1100				
SB - 2A	350		1400	900	870	690	1700	1000
SB - 3			3600					
SB - 3A	170	3700	510	570	880	3200	5900	1900
SB - 4	1600	88	2200	3400				
SB - 4A	160	800	2100	3400	4500	8300	3900	
						Continue		

→ Go ↓ w/delineation (Paul Sheeley OCD)

The area around the produced water storage tanks and surrounding berm at New Mexico Salt Water Disposal Company Station # 11 is an area of *"historic storage of produced water and occasional spills throughout the many years of its use".*

The soils surrounding tank battery and bermed area, accessible for "plant roots" to a depth of 60" inches below ground surface, did not indicate that the release of April 17, 2003 had any significant impact on the surface soils as the concentrations of chloride generally were in acceptable plant tolerance levels. The small amount of rainfall in the past several years would not have the ability to drive any surface chloride contamination to any significant depth below ground surface as most rainfall would evaporate or transpire due to the dry surface conditions present. No salt crystallization, wicking, or leaching of salt was evident on the ground surface surrounding the tank battery and bermed area at NMSWDCO Station # 11. The release of April 17, 2003 was contained by the existing bermed area surrounding the tank battery.

All Soil Borings did have significant concentrations of chloride below the ground surface after a depth of 9'feet. This should be expected, as the practices, protocols, and standard operating procedures of produced water disposal plants have drastically changed since the 1960's and 1970's when New Mexico Salt Water Disposal Company first started using the facility.

As the produced water spilled onto the ground surface from various unreported historic spills from the tank battery and spread out, it quickly saturated the very porous sand close to the tank battery and caliche soils of the bermed area surrounding the tank battery. The produced water also pooled in low areas behind the tank battery as it spread out. The soil saturation tended to migrate

vertically rather than horizontally due to the nature of the porosity and low horizontal permeability of the clayey sands in the area. For this reason some soil borings have high concentrations of chloride in close proximity to soil borings that have no significant chloride concentrations. The variable chloride Concentrations in SB-4 and SB-4A (within 6' feet horizontal distance from each other) at depths of 0' feet – 2' feet and 4' feet to 6' feet below ground surface can be attributed to this phenomenon.

Through time and additional produced water releases, the chloride concentrations in the sands and clayey sands beneath the site were driven downward until they hit a fat clay zone at 29'feet to 31' feet below ground surface at the site. This fat clay zone was encountered in soil borings 1A, 2A, 3A, & 4A.

In soil boring 3A, a core sample of this clay from 34' feet to 36' feet below ground surface was sent to Daniel B Stephens Soils Testing Laboratory in Albuquerque, New Mexico for analysis. This clay sample was analyzed by the lab for Initial Moisture Content, Dry Bulk Density, Calculated porosity, Saturated Hydraulic Conductivity, Effective Porosity, and total organic carbon content. The results of this analysis can be seen in appendix 6.

The most important test components of this analysis of the clay sampled in SB-3A @ 34'-36'are as follows:

Ksat (cm/sec) = 1.5E-08 (Hydraulic Conductivity rate at which groundwater, at saturation, will flow through the sampled clay) this rate is extremely slow.

Intrinsic Permeability: = 1.5E-13 (the sampled clay is extremely impermeable)

Effective Porosity: 5.5% (the sampled clay is not very porous)

The soil test analyses of the sampled clay in soil boring 3A show that the clay zone, underlying the site and encountered in soil borings 1A, 2A, 3A, and 4A, is a tight, non porous, impermeable clay barrier. The soil analysis test results also show that it is unlikely that this clay barrier will allow any release of produced water to penetrate and migrate to ground water. (See appendix 6.)

High chloride concentrations encountered in the soil samples in soil borings 1A-4A are a result of numerous years of previous produced water releases from the facility and not a result of any recent releases. Thirty years of annul rainfall events have probably not driven the concentrations of chloride downward. The concentrations of chloride seen in the soil borings are from previous *"historic"* releases that occurred long before the documented release on 04/17/03.

The most consistently high chloride concentrations are seen in all borings at a depth of 29'-31' feet below ground surface which is at the top of the clay barrier underlying the site. The samples from SB-1A, SB-2A, and SB-3A, at a depth of 34'-36' feet below ground surface, continued to have high concentrations of chloride but were on the average 43% lower in chloride concentration than the samples from the 29'-31' foot intervals. It can be argued that if the clay zone was so impermeable, why did the chloride concentrations continue after the 29'-31' depth? It is the opinion of CMB that the hollow stem auger drilling method carried or dragged the chloride concentrations seen in the soil borings at the 29'-31' foot intervals down the soil boring holes to total depth. This dragging of chloride concentrations by the drilling auger influenced the chloride concentrations seen at the 34'-36 feet interval in each soil boring.

In SB-4A a perched water zone, possibly caused by a previous *"historic"* release of produced water, was encountered at the top of the clay zone from 29'-31' feet below ground surface. This perched water was only encountered in soil boring SB-4A. This perched water was sampled and tested for Volatile Organic Compounds, Chloride, Poly Aromatic Hydrocarbons, Mercury, Total recoverable metals, and total dissolved solids. The results can be found in appendix 5 and a summary of the analytical results is as follows:

Soil Boring 4-A	***Depth: 29'-'31':***
Aqueous Sample:	***PPM:***
BTEX	**Non-Detect**
TPH	**Non-Detect**
PAH's	**Non-Detect**
VOC's	**Non-Detect**
Arsenic	**Non-Detect**
Barium	**0.45PPM**
Cadmium	**Non-Detect**
Chromium	**Non-Detect**
Lead	**Non-Detect**
Selenium	**Non-Detect**
Silver	**Non-Detect**
Mercury	**Non-Detect**
TDS	**70000 mg/l**
Chloride	**45000 PPM**

There is an elevated chloride concentration in the soil sample from soil boring 4-A at a depth of 24'-26' feet below ground surface. This is the area of the capillary fringe of the perched water zone encountered in soil boring 4-A. If the clay barrier was permeable, then the perched water would not have occurred at all.

in soil boring 4-A , and a capillary fringe would not have existed at a depth of 24'-26' feet with higher concentrations of chloride. Also the high chloride concentrations analyzed in the perched water would have made the soil concentration of chloride in the soil sample at 29'-31' feet in soil boring 4-A much higher if the soil was permeable. The soil chloride sample @ 29'-31' in SB-4A would be closer to the chloride concentration of the perched water. The concentration in the soil @ 29'-31' in soil boring 4A is only 8.6% of the chloride concentration of the perched water.

Contour maps and 3-D surface maps of the clay zone and chloride concentrations, based on the unsurveyed depth to the clay or chloride in each boring, can be seen in appendix 4. The reason the perched water occurs in soil boring 4-A and none of the other borings, is that the clay surface is an indurated surface with a small dip or bowl occurring near soil boring 4-A allowing for perched water to be built up in soil boring 4-A. This pattern can be seen in the chloride concentration maps as well.

A field decision, not to penetrate this impermeable tight clay barrier any further than 36' feet below ground surface and install a monitor well east of the facility was made by CMB. It would not be prudent or professional environmental practice to continue to drill to ground water, after a perched water zone is encountered, and allow any perched water, with possible high chloride concentrations or other possible contaminants, to penetrate a boring annulus and allow any soil boring to become a conduit for potential contamination of the groundwater.

To reiterate, in the past (prior to 1980) the environmental regulations for produced water and operations of salt water disposal facilities were much different than present regulations and practices. Accepted practices and operating procedures have also changed for the operators of such facilities.

Chloride contamination is not an issue at this site as chloride contamination in all samples is not a threat to groundwater as the clay zone encountered in the borings will prevent vertical migration of any chloride contamination. The concentrations of chloride near the surface to a depth of 9' feet below surface will not interfere with plant or root development as the chloride concentrations are within acceptable tolerance levels for plants growing in the area. There are not large areas of stressed vegetation on the site or nearby off-site. All soil borings showed a significant reduction in chloride concentrations after the clay zone beneath the site was encountered.

To reiterate: *The New Oil Conservation Division does not have a soil standard for chloride contamination. However, the drinking water standard of 250-mg/l chloride is often mistakenly used as a soil standard.*

3.0 FINDINGS AND CONCLUSIONS:

CMB Environmental and Geological Services Inc.'s investigation revealed some evidence of environmental concern at the New Mexico Salt Water Disposal Company Station #11 Facility. The following conditions were observed during the course of the investigation:

The tanks and flow lines that produced the documented produced water spill at the site on April 17, 2003 have been replaced. The berm surrounding the produced water tank battery at NMSWDCO Station # 11 has also been upgraded.

A soil borings were drilled at the four corners of the bermed area surrounding the produced water storage tanks at the facility and near the ground surface area where the reported produced water spill occurred over the top of the berm and onto the site caliche pad. The reported spill occurred from a leak in on-site produced water storage tanks or flow lines.

Soil borings were mechanically drilled with a hollow stem auger equipped with a 2' foot split spoon sampling device. Samples were collected by a professional geologist and analyzed by a certified environmental analysis laboratory. Soil materials' testing was performed by a professional soil testing laboratory. The mechanical drilling was performed by professional environmental drilling company.

The approved workplan was to assess the soil chloride contamination and possible impacted groundwater by drilling four soil borings at the site near the four corners of the bermed area surrounding the facility produced water storage tanks. The borings were to be advanced until a soil sample chloride concentration of 250 mg/l (PPM) or groundwater was reached. A monitor well was to be installed if groundwater was encountered. *A clay zone was encountered in each of the borings SB1-A-4A at a depth of 29'-36' feet below ground surface. The borings were terminated at this depth and a prudent environmental decision not to advance the borings to groundwater was made. This sampled clay material was tested at the Daniel B. Stephens soil testing laboratory located in Albuquerque, NM and showed that the clay was of low porosity and impermeable. A perched water zone was encountered in soil boring 4-A. The perched water was sampled and analyzed for hydrocarbons (semi-volatile and volatile), metals, total dissolved solids, and chloride by Hall Environmental Analysis Laboratory located in Albuquerque, NM. The water sample contained high chloride concentrations and high total dissolved solids but contained no hydrocarbons or metals.*

A 1000 PPM Total Petroleum Hydrocarbon (TPH) concentration threshold, established by the New Mexico Oil Conservation Division, was used, as Groundwater is less than100' feet below ground surface at or near the site.

A water bearing sand zone in the Ogallala Formation, exists underlying the site at a depth of 50'-70' feet below ground surface. The Ogallala Formation has a regional dip to the east and general Ogallala Formation groundwater flow direction is to the east. There are no down gradient ranch stock wells, lakes, or water areas, within a mile of the site.

Soil contamination of greater then 1000 PPM TPH was not observed in any of the soil or water samples collected from the soil boring area. There was no BTEX contamination in any of the soil boring samples.

At the depth of 29' - 31' feet below ground surface at the site; a fat clay unit underlies the surface unconsolidated sand. In the soil borings chloride concentrations of samples at the top of this clay and subsequent samples after penetrating this clay zone dramatically reduced in analytical chloride concentrations. The continued chloride concentrations below the top of the clay zone are not indicative of migration of perched chloride rich produced water but of contamination of the borehole by the hollow stem auger drilling method.

There is some chloride contamination, but most borings showed low chloride soil concentrations to depth of 9' feet below ground surface. Annual rainfall in the area over the last ten years has had a minimal impact on observed chloride concentrations in the near surface soils or soils below 9' feet below ground surface. Rainfall events in the area would have little impact on chloride concentrations of the soils migrating vertically to groundwater. The chloride concentrations seen in the soil boring soils can be attributed to *"Historic spills that happened prior to modern environmental regulations and procedures."* Surface areas around the site were not affected by leaching or wicking of the chloride concentrations by rainfall events from depths of 9' feet below ground surface to the top soil or affecting the depth of plant roots. There are not large areas of stressed vegetation on site.

The possibility of off-site migration of the defined soil chloride concentrations is remote. Chloride fate and transport modeling using SEVIEW 6.2 modeling software could facilitate a risk based corrective action analysis of the site. This analysis could be performed on this site to assess the *"true risk"* of this release or previous releases affecting human health and habitat. By assessing the true nature of the risk to human health from this release or previous releases, a determination can be made as to what level of corrective action should be obtained, if any.

4.0 PROFESSIONAL QUALIFICATIONS AND SIGNATURE PAGE

CMB Environmental and Geological Services Inc., is multi-disciplined geological and environmental consulting firm with many years of experience. Clayton M. Barnhill, principal, is a registered Professional Geologist, and a New Mexico Environmental Department Certified Scientist with the Petroleum Storage Tank Bureau, certified scientist # 246.

Clayton M. Barnhill, principal, was the environmental professional who conducted this ESA. Clayton M. Barnhill, principal of CMB Environmental & Geological Services Inc., represents that as assessor, to the best of his knowledge, the statements and facts in this ESA are true and correct and, to the best of the principal's knowledge, no material facts have been suppressed or misstated.

CMB ENVIRONMENTAL AND GEOLOGICAL SERVICES, INC.

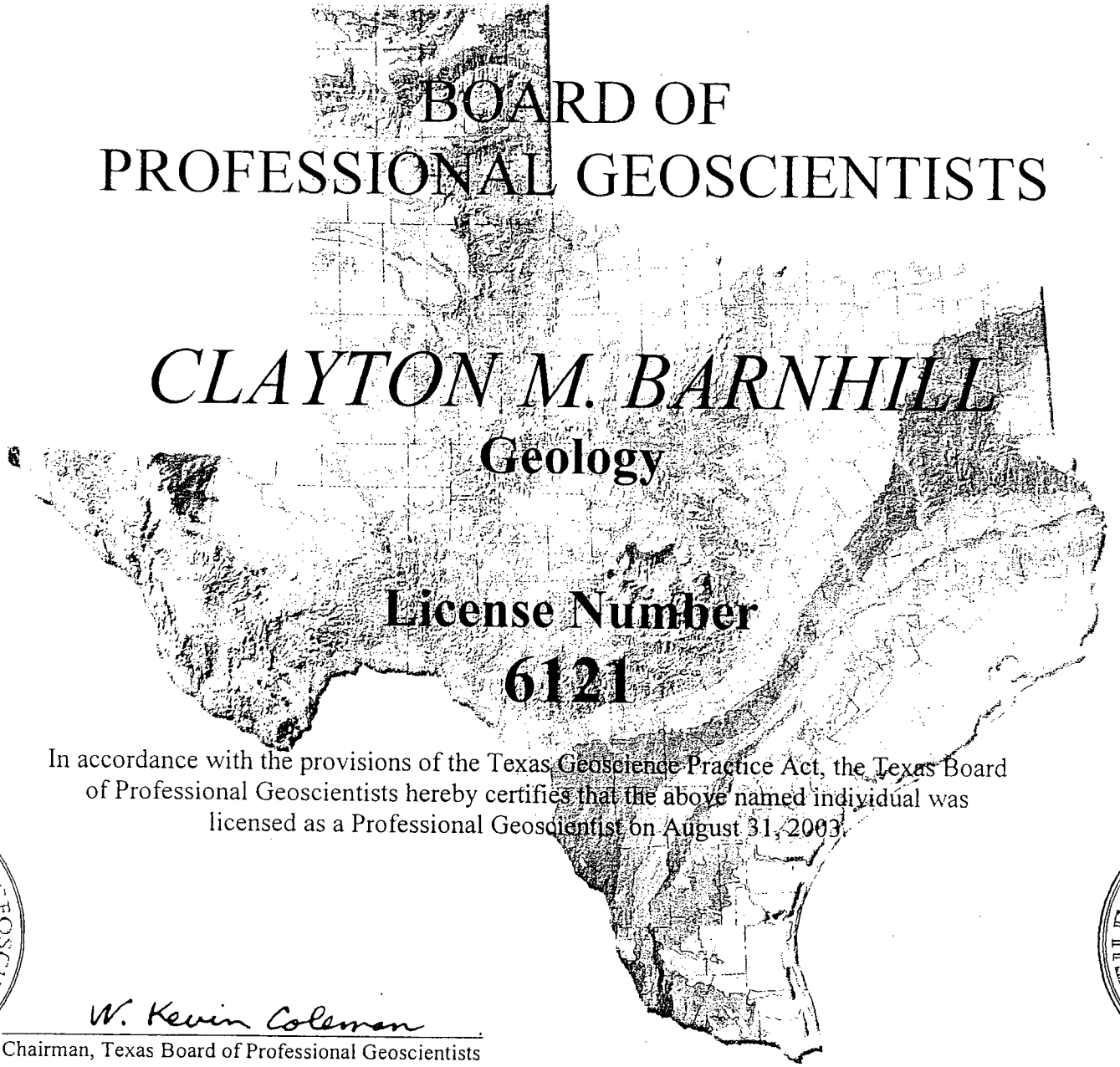
Clayton M. Barnhill, P.G.
Date: 04/01/04

REFERENCES:

Cox, Dillon N., Mickelson, Brice C., Roath, Archie J., Turner, Millard T., Wilson, Carl D. 1974; *Soil Survey of Lea County New Mexico,* United States Department of Agriculture, Soil Conservation Service

STATE OF TEXAS

BOARD OF PROFESSIONAL GEOSCIENTISTS



CLAYTON M. BARNHILL

Geology

License Number

6121

In accordance with the provisions of the Texas Geoscience Practice Act, the Texas Board of Professional Geoscientists hereby certifies that the above named individual was licensed as a Professional Geoscientist on August 31, 2003.

THE STATE OF TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS

W. Kevin Coleman

Chairman, Texas Board of Professional Geoscientists

THE STATE OF TEXAS

Texas map courtesy of the Bureau of Economic Geology, The University of Texas at Austin

FIGURE: 1A

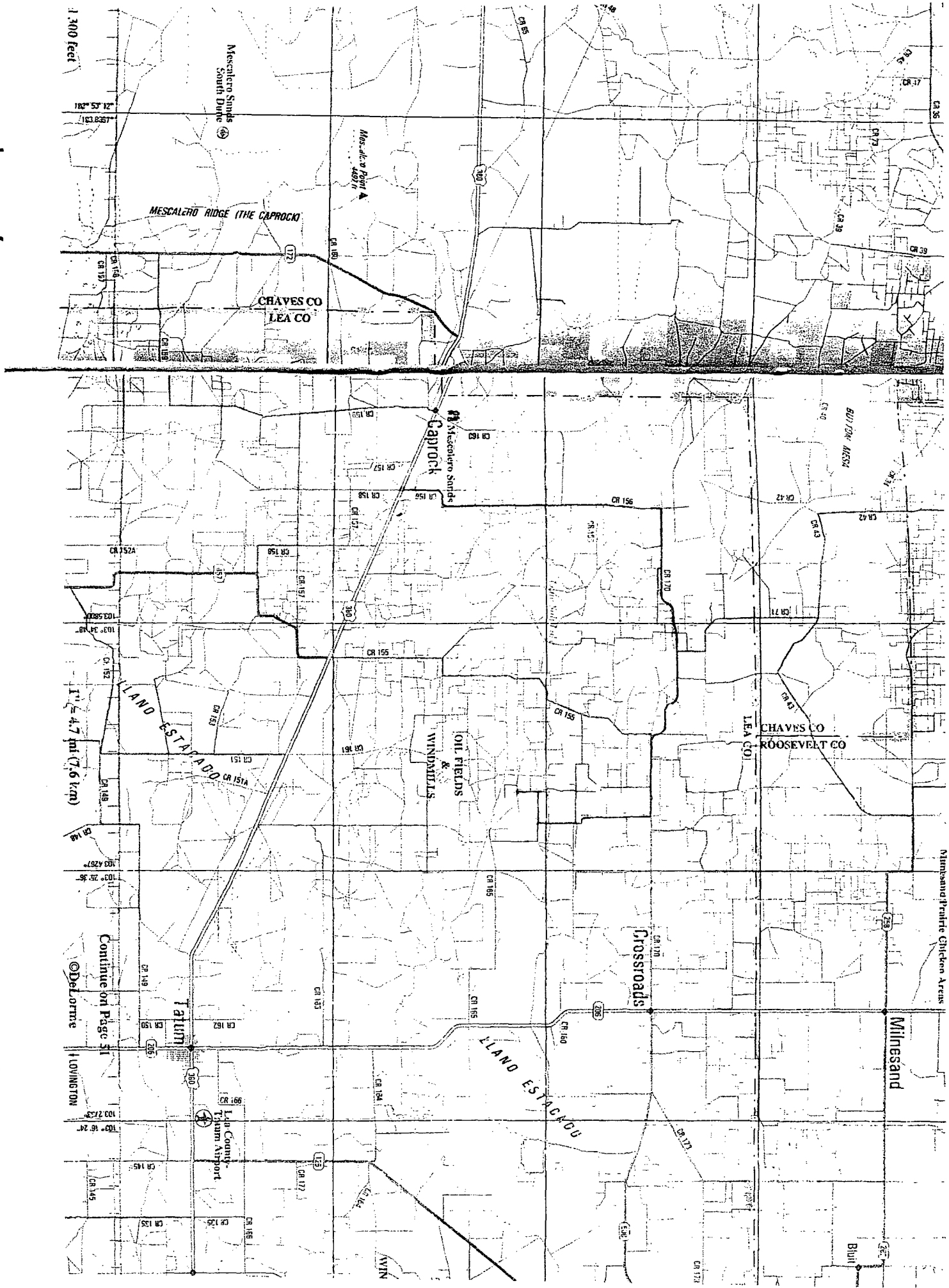
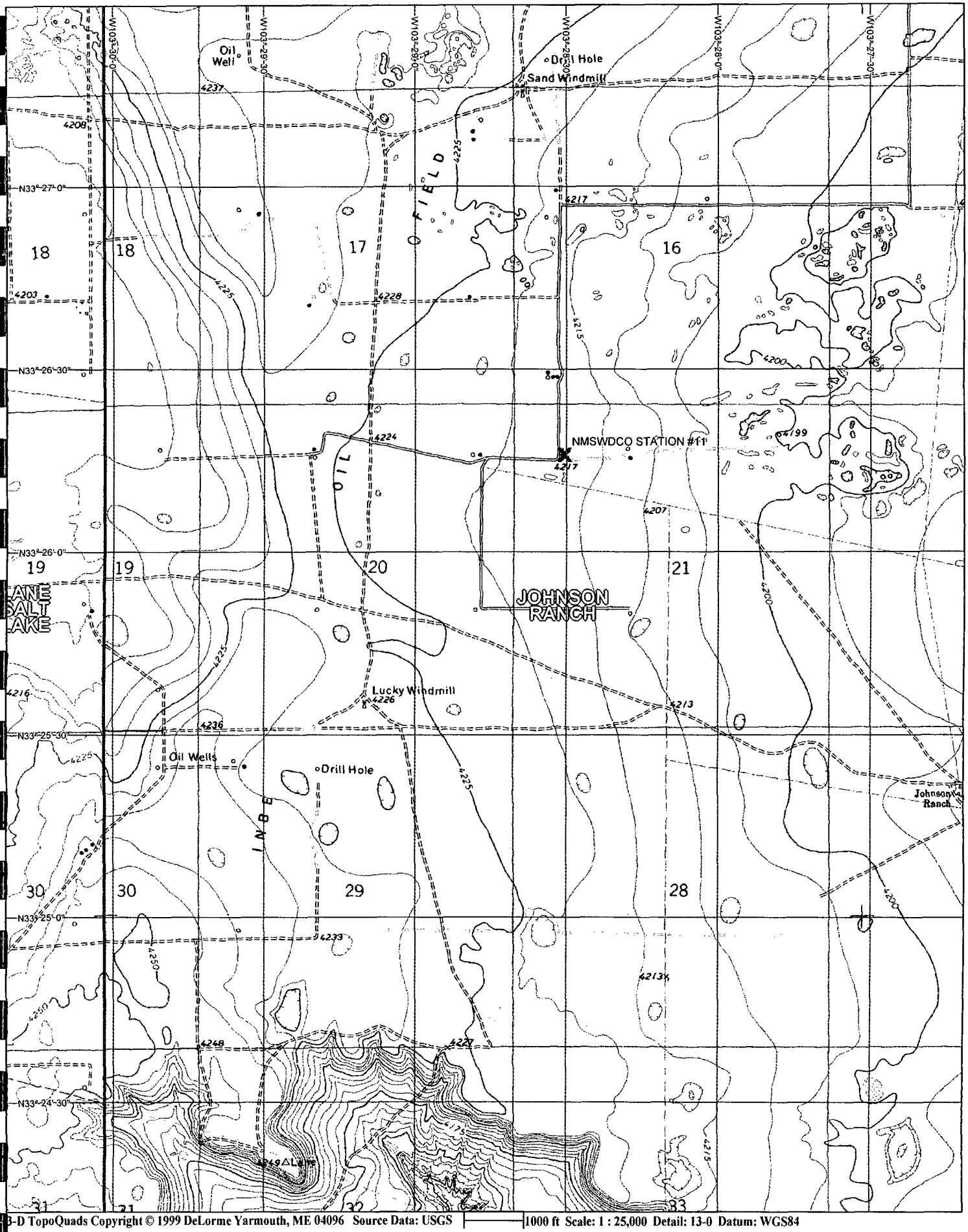

1,300 feet
Mescalero Sands South Dune
MESCALERO RIDGE (THE CAPROCK)
CHAVES CO
LEA CO
Caprock
Mescalero Sands
CR 156
CR 155
LLANO ESTACADO
WINDMILLS & OIL FIELDS
CHAVES CO
ROOSEVELT CO
LEA CO
1" = 4.7 mi (7.6 km)
Continue on Page 311
©DeLorme
Tatum
LOVINGTON
Lea County-Tatum Airport
Crossroads
Milnesand
Milnesand Prairie Chicken Areas

FIGURE : 1B



1000 ft Scale: 1 : 25,000 Detail: 13-0 Datum: WGS84

FIGURE: 1C

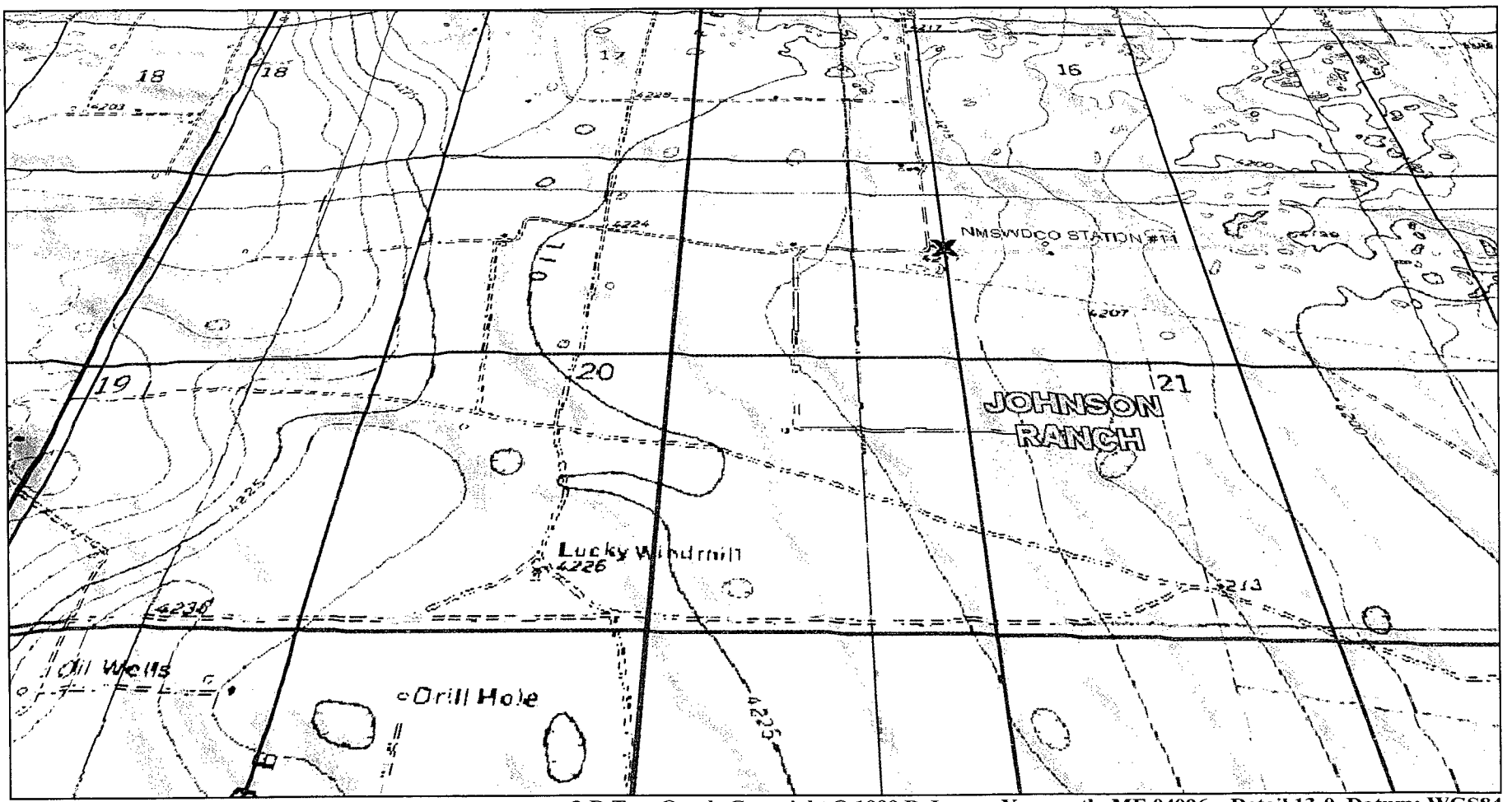
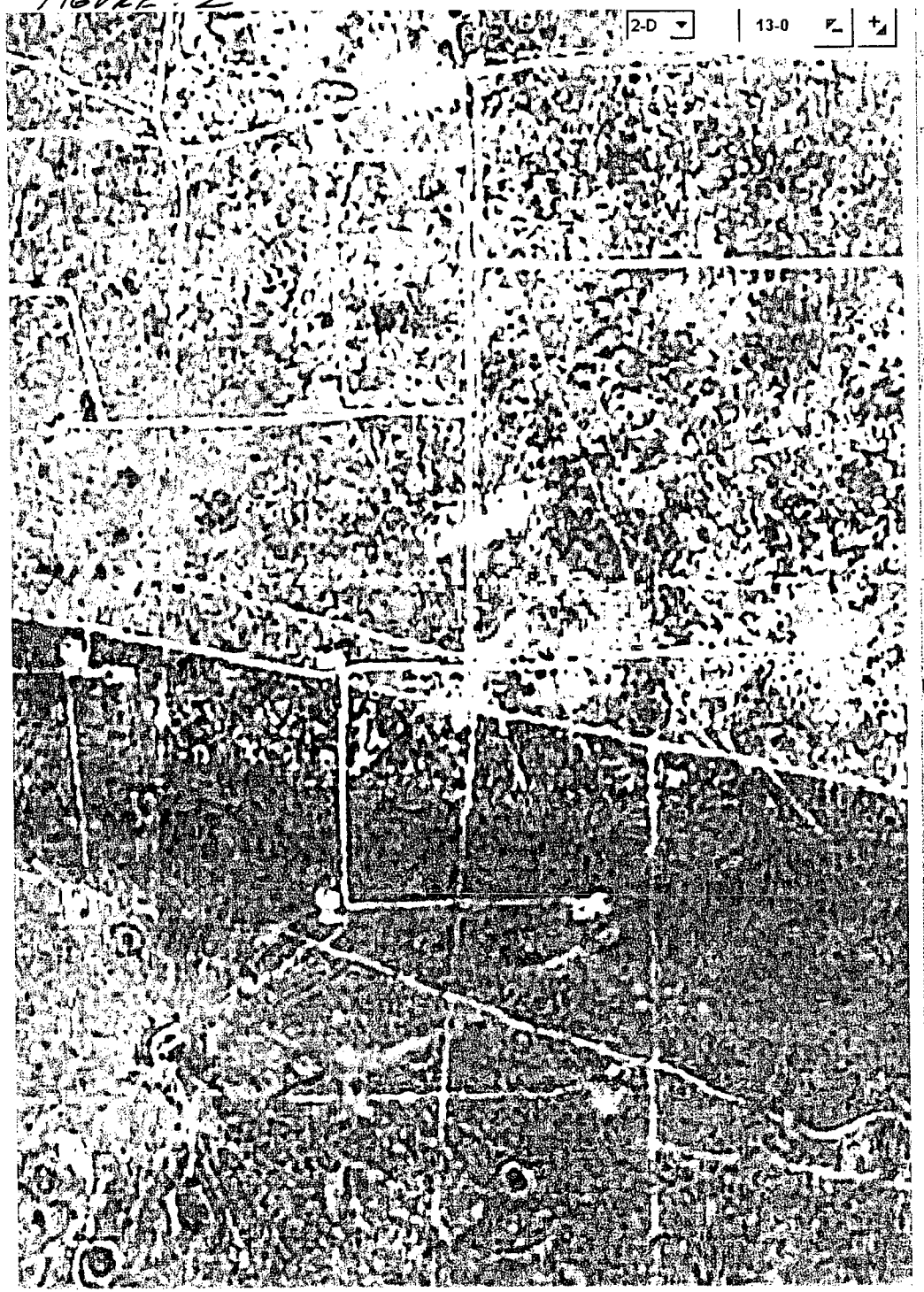
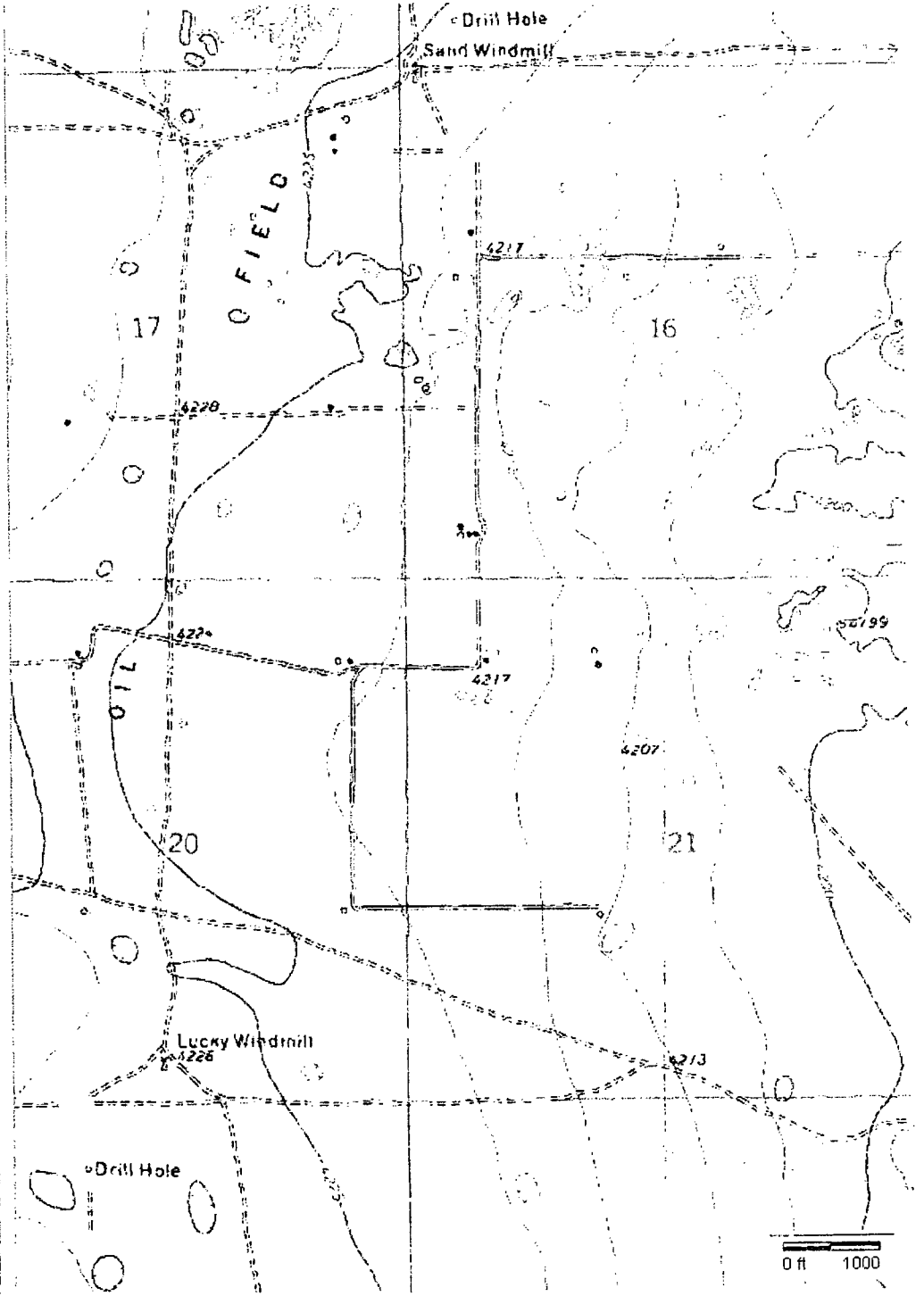


FIGURE 2


2-D
13-0


Drill Hole
Sand Windmill
OIL FIELD
17
16
20
21
4220
4217
4222
4207
4213
4199
Lucky Windmill
4226
Drill Hole
0 ft
1000

— SHEET NUMBER 67

SCALE: 1:31680

(Joins sheet 62)

67

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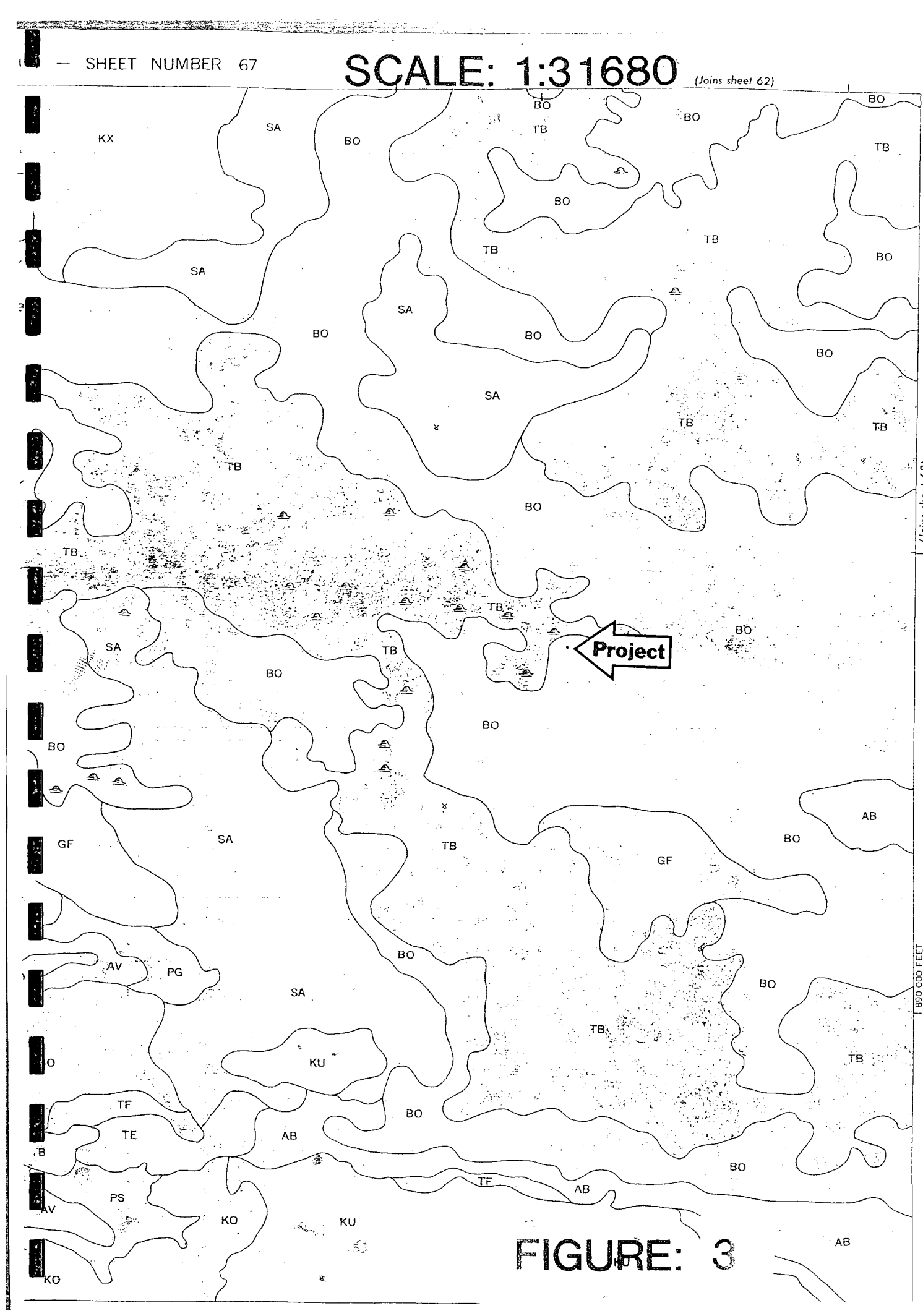

FIGURE: 3

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(505)-827-5724

SURFACE RESOURCES
(505)-827-5793

MINERAL RESOURCES
(505)-827-5744

ROYALTY
(505)-827-5772

State of New Mexico
Commissioner of Public Lands
Ray Powell, M.S., D.V.M.
310 Old Santa Fe Trail, P. O. Box 1148
Santa Fe, New Mexico 87504-1148
Phone (505)-827-5760, Fax (505)-827-5766

PUBLIC AFFAIRS
(505)-827-5765

ADMINISTRATIVE MGMT.
(505)-827-5700

LEGAL
(505)-827-5713

PLANNING
(505)-827-5752

July 27, 1999

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Environmental Dept
~~Jerry~~ ~~Dave~~ Deichmann
Jerry
Dir. Surf Operations

New Mexico Salt Water Disposal Company
Post Office Box 1518
Roswell, New Mexico 88202

Re: **Salt Water Gathering and Injection Disposal System**
Sections 18, 21, and 28, Township 10 South, Range 34 East
Lea County, New Mexico

Gentlemen:

It has come to our attention that certain unacceptable damages to the surface exist on the above described oil and gas lease. The State Land Use Specialist has indicated there are areas of salt water pipeline repairs that have not been properly backfilled and compacted. Also, the earthen spill containment berms surrounding the salt water disposal wells and the associated tanks should be re-worked and higher walls should be constructed in order to capture any leaks that may occur. All non-functional or non-operational equipment and surface trash and debris needs to be removed from the lease, and areas of surface damage from salt water and oil spills needs to be reclaimed and/or remediated. We are also requesting your company to place identification signs on your wells showing: 1.) well number; 2.) legal description of the well; and, 3.) an emergency telephone number.

These items of concern could potentially cause harm to the livestock grazing in the area and may also hamper the re-vegetation of native grasses that exist in the area.

This problem is in violation of prudent operator standards and the attached State Land Office Rules 1.068 and 1.069. These rules outline minimum requirements for surface operations and reclamation on State leases.

As operator of the lease, you have incurred certain obligations which include operating in a prudent manner. In addition, it requires protection of the surface estate, including livestock, soil, vegetation, and surface improvements.

You are requested to inspect the lease and to enforce corrective action within sixty days from the date of this letter. Please coordinate your plans and an inspection date with our Land Use Specialist Leon Anderson, whose phone number is (505) 392-8736. If you have any questions, please feel free to contact me.

Respond by Mon Sep 27th
1) Called Leon Anderson office 9/24 they said he out and would call me 9/27 (mon)
2) Spoke w/ him today 9/27 (I called) set up Wed 9/29

Sincerely.
RAY POWELL, M.S., D.V.M.
COMMISSIONER OF PUBLIC LANDS

Anthony H. Mark
for By: Jami Bailey, Director
Oil, Gas, and Minerals Division
(505) 827-5745

Leon office
392-8736

pc: Leon Anderson, Land Use Specialist, State Land Office
Jim Norwick, Assistant Director - Field Operations, State Land Office
Nick Mace, Assistant Director - Commercial Resources Division, State Land Office
Justin Johnson, State Grazing Lessee
Attachments

w/ 1+2 letter

COMMERCIAL RESOURCES
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SURFACE RESOURCES
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MINERAL RESOURCES
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(505)-827-5713

PLANNING
(505)-827-5752

October 1, 1999

LA-SA145
FOLLOW-UP

TO: Scott Dawson, Oil Gas & Minerals Division

THRU: Jim Norwick, Assistant Director-Field Operations

FROM: Leon Anderson, Land Use Specialist

RE: Oil Field Surface Damages
New Mexico Salt Water Disposal Co.

SYNOPSIS

On September 29, 1999 Justin Johnson with Diamond & Half, John Maxey and Clarence Massey with New Mexico alt Water Disposal Company, and I field inspected the areas addressed in LA-SA145 dated July 12, 1999. The area inspected is part of state grazing lease GS-0928.

New Mexico Salt Water Company operates an extensive saltwater disposal system across a large portion of the ranch. Several saltwater leaks have occurred over the past few years. Several spots have been uncovered and the line replaced with a fas line but the sites have not been back-filled.

Each site was visited and discussed with a consensus being made that New Mexico Salt Water Disposal Company representative would take this consensus back to his supervisors and this is the recommendation I would send to my supervisors in Santa Fe with the understanding that each party may not get what they recommend. Justin Johnson was agreeable to the following:

1. All berms around SWD Wells and Tanks would be repaired as needed.

2. All no-functional pipe and fittings, fasline, PVC and Steel Pipe,etc would be removed and stored within their fenced storage areas and not on the surface.

3. The remaining 1/2 mile of PVC line would be replaced with a SDR Poly Fas-Line. Section 19, T10S, R34E Justin Johnson called on September 30 and informed me he wants the potential new line buried with 1" to 3" of cover if possible.

4. All exposed PVC lines would be covered.

5. All areas between Section 21 SWD Well and #8 Pump Station and pump station #11 would be covered where repairs were made and left uncovered.

6. Monitor well may be needed and placed just east of the SWD Pump Station #11 berm area in Section 21, T10S, R34E.

7. The material inside the berm at SWD Pump Station #11 may need to be looked at. This is due to the amount of material that has overflowed the storage tanks.

LEGAL DESCRIPTION

T10S, R33 & 34E NMPM
SECTION 28, 21, 18, 19: LEA COUNTY

LOCATION

Subject Ranch is located approximately 17 miles northwest of Tatum, New Mexico. Access can be gained via Price Ranch Road on the west side of NM-18.

HIGHEST AND BEST USE

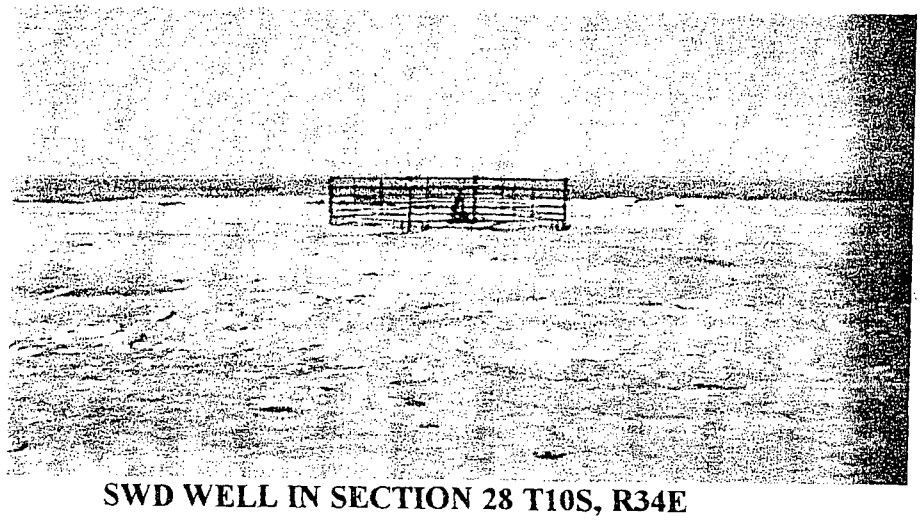
Current highest and best use of subject land is the production of oil and gas. This is intermixed with the grazing of livestock. No other trends exist at this time.

ESTIMATE OF VALUE

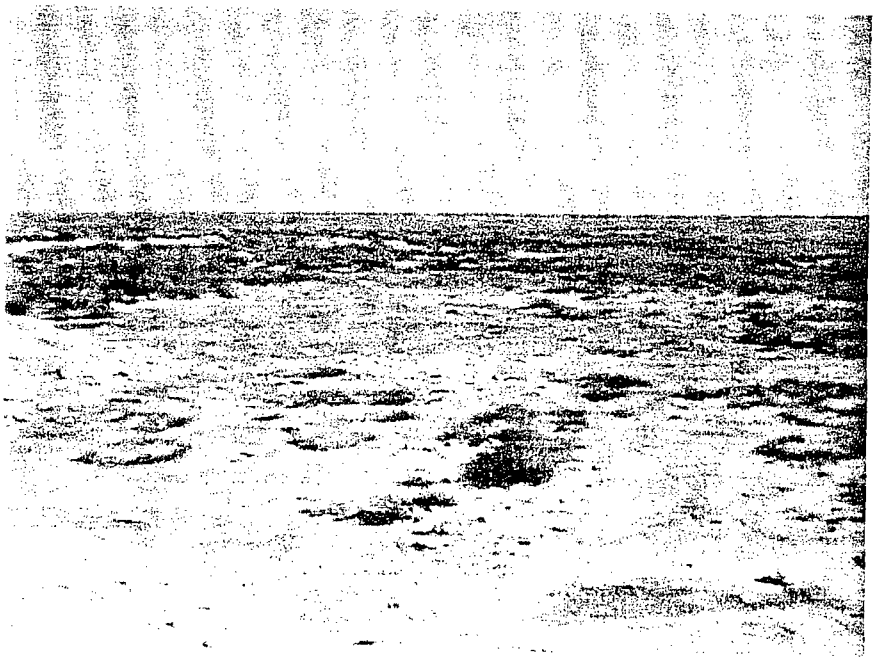
N/A

REMARKS

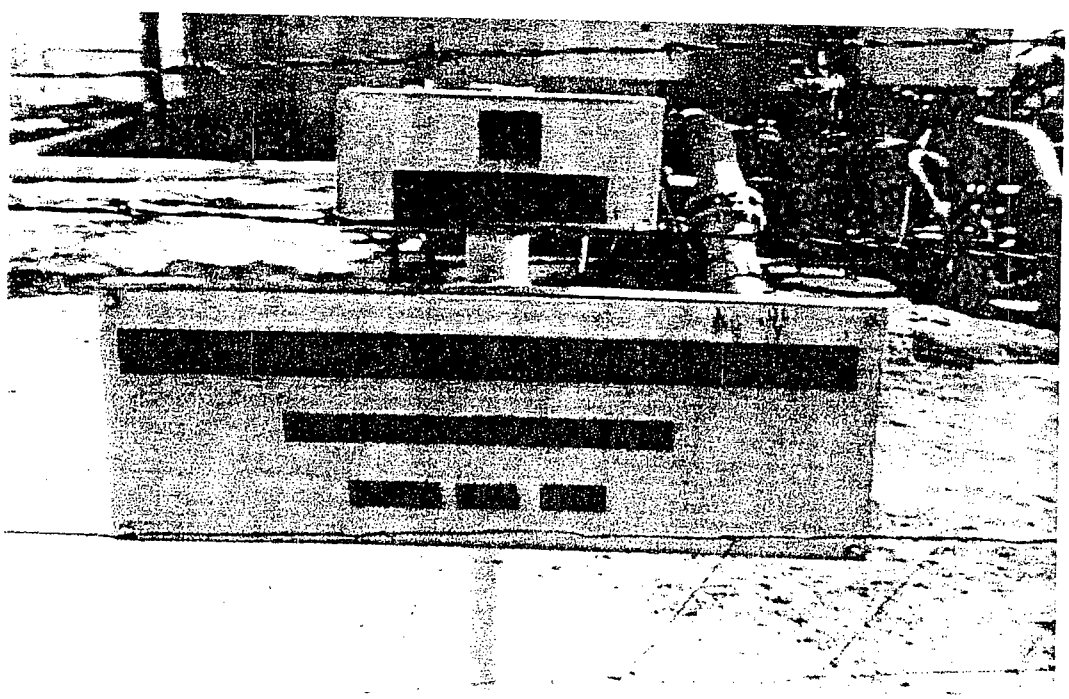
Please review the seven (7) matters of the consensus and advise accordingly.



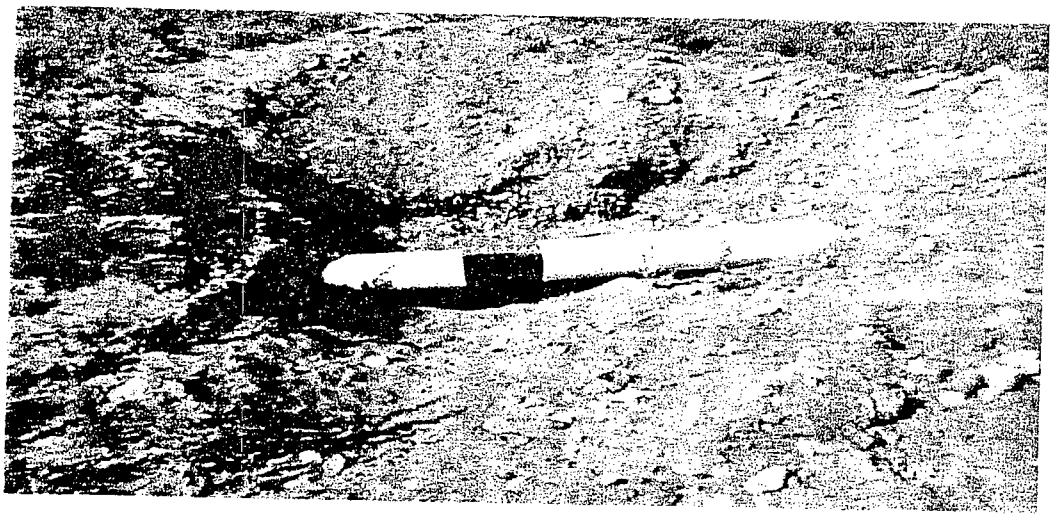
SWD WELL IN SECTION 28 T10S, R34E
REPAIR BERM OR DYKE



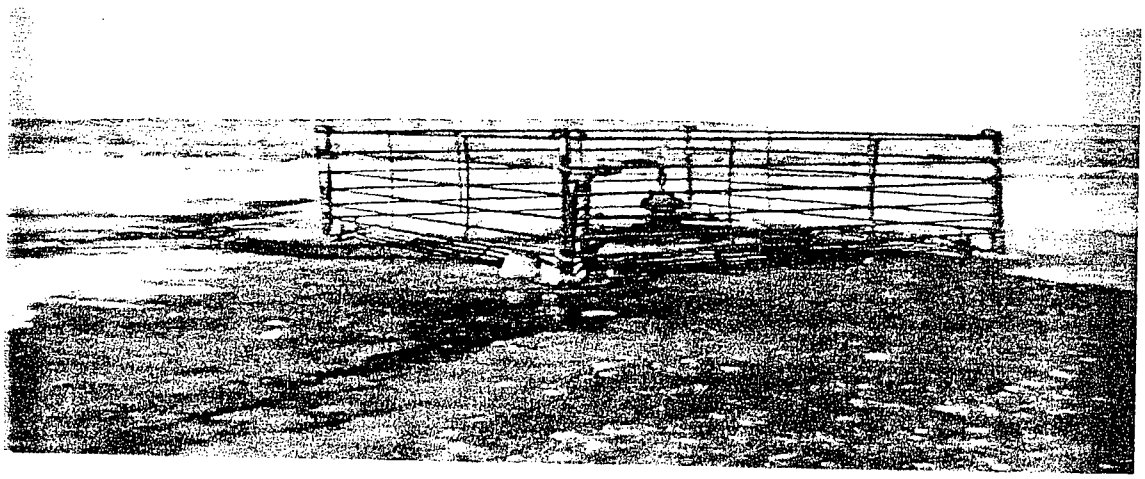
OIL AND SALT WATER SPILL WITHIN PUMP STATION #11 BERM
SECTION 21, T10S, R34 OIL HAS BEEN COVERED AT THIS TIME



A MONITOR WELL IS NEEDED ON THE EAST SIDE OF BERM AREA

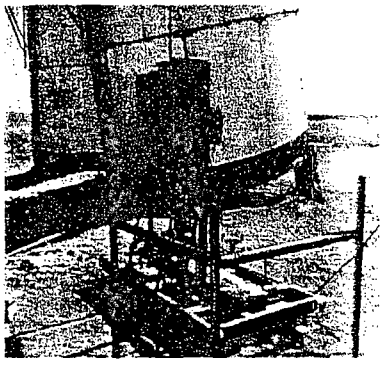


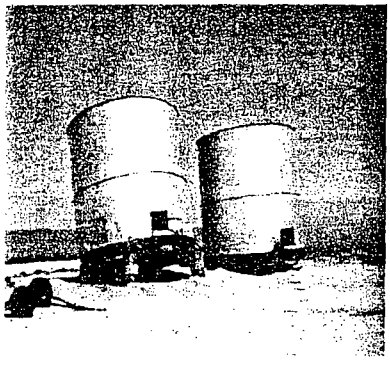
ONE OF SEVERAL LEAK REPAIR AREAS IN SECTION 20, T10S, R34E
WILL BE COVERED WITH POTENTIAL OF POLY LINE
EXTENSION TO #8 PUMP STATION

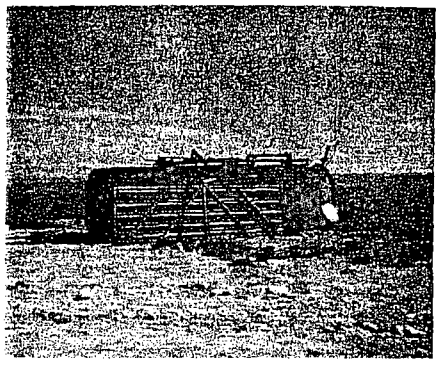


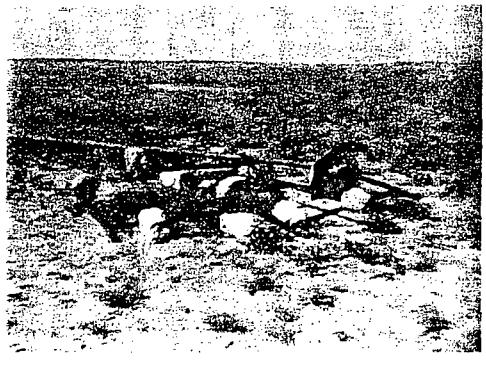
JULY SPILL AT CONTINENTAL #1 SWD
SECTION 18, T10S, R34E SE4NW4

BERM WILL BE REPAIRED ON A REGULAR BASIS









MOST OF THIS NON-FUNCTIONAL EQUIPMENT HAS ALREADY BEEN REMOVED . THE ADDITONAL EQIPMENT WILL BE REMOVED IN THE NEAR FUTURE LEASE IS JUST NORTHEAST OF CONTINENTAL SWD WELL SECTION 18, T10S, R34E SE4NW4

June 2, 2003

NM Salt Water Disposal Co.
Attn: John C. Maxey
P. O. Box 1518
Roswell, New Mexico 88202

Re: Trespass on State Trust Land

Dear Mr. Maxey:

This Office has been notified by Our Field Operations Division that you are operating a ~~crude oil recovery~~ and Salt Water Disposal Operation within the ~~NW¼NW¼~~, Section 21, Township 10 South, Range 34 East.

Be advised that this operation is in trespass. In order to bring this operation into compliance we will require you to obtain a Business lease for the site and a Salt Water Disposal Easement. Penalties dating back to the initial time of trespass will also be assessed including back rental.

Also reported is the fact that numerous problems exist with the facility that must be corrected. Apparently this has been an ongoing issue since 1999. Our Field staff has determined that the following requirements be met in order to correct the problems:

1. A new storage tank and pumping facility be build with an impermeable liner beneath the tank area and berm, with the berm of sufficient size to contain 1.5 times the capacity of the tank or tanks.
2. A ground water assessment be conducted to determine contamination.
3. If ground water contamination exists, treat and restore to Water Quality Control Commission Standards.
4. That the surface be remediated by removing contaminated soils and replacing with clean soil.
5. A monitoring well be installed.

Enclosed are the application forms for the above mentioned lease and easement. Please complete as soon as possible and

submit along with a registered survey of the site and applicable fees.

If you have any questions regarding the application process, please call me at 505-827-4003.

To initiate the site modifications and remediation, contact our Environmental Specialist, Cody Morrow at 505-827-5737.

Joseph R. Lopez,

C Morrow. Enviro - Specialist

Commercial Resources

2 Anderson.

Enclosures

CMB Environmental & Geological Services, Inc.
PO Box 2304
Roswell, New Mexico 88202-2304
Phone & Fax: (505) 622-2012 email: cmbenviro@dfn.com

NM Salt Water Disposal Company
Attn: Mr. John C, Maxey, PE
PO Box 1518
Roswell, New Mexico 88202-1518
(505) 622-3770 Ext. 224
Email: read@lookinglass.net

July 14, 2003

Re: Environmental Site Assessment
Salt Water Disposal Operation
NW1/4 NW1/4, Section 21,
Township 10 South, Range 34 East
Lea County, New Mexico

Dear Mr. Maxey:

CMB Environmental & Geological Services, Inc., has been hired by NM Salt Water Disposal Company to conduct an environmental site assessment of the above referenced property. After review of available data of the site, CMB proposes the following work to be performed:

1.) Soil borings will be drilled at the four corners of the bermed area surrounding the salt-water storage tanks located on site. Borings will be drilled using a hollow stem auger drilling rig and sampled in 5-foot intervals using a split-spoon sampling device. Soil samples collected at these five-foot intervals will be field tested for Chloride contamination using a hand-held Chemetrics titration cell for titrimetric analysis of chloride. Once the field analysis indicates that the soil concentration of the boring is 250-mg/l chloride, then the advancement of the boring will be terminated. A confirmation soil sample from this depth will be collected and sent to Hall Environmental Analysis Laboratory, located in Albuquerque, NM. This soil sample will be analyzed by Hall Lab for Chloride using EPA Method 9056/300. Abandonment of all soil borings will be accomplished by backfilling with bentonite pellets from total depth to ground surface. All drilling and sampling equipment will be de-contaminated between sampling events and the drilling of the next soil boring.

2.) If all the drilled soil borings contain sampled soil that is below 250 mg/l chloride at total depth, then continuing the soil borings to groundwater will not be necessary.

3.) Groundwater in the area of the site is estimated to be 37' feet below the ground surface. If any of the soil borings are advanced to a depth of 30' feet below ground surface, due to chloride contamination of greater than 250 mg/l, then that boring, or the soil boring with the highest concentration of Chloride at total depth, will be advanced to groundwater. The soil boring will be drilled ten more feet into the aquifer and a monitor well will be installed. The monitor well will be installed using New Mexico Environment Department specifications and guidelines for

CMB Environmental & Geological Services, Inc.
PO Box 2304
Roswell, New Mexico 88202-2304
Phone & Fax: (505) 622-2012 email: cmbenviro@dfn.com

monitor well installation. A sample of the capillary fringe, estimated to be at 35 'feet below ground surface, of this boring will be taken and analyzed by Hall Lab for Chloride. The monitor well will be developed, purged of a minimum of three well volumes, and then a water sample will be taken. This water sample will also be analyzed by Hall Lab for Chloride contamination using EPA Method 9056/300

If you have any questions or comments, please do not hesitate to call.

Sincerely,

Clayton M. Barnhill, PG

NEW MEXICO SALT WATER DISPOSAL COMPANY, INC.
400 N. PENN, SUITE 1000 P. O. BOX 1518
ROSWELL, NEW MEXICO 88201
PHONE 505 625-0266

July 31, 2003

State of New Mexico
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Attention: Mr. Joseph R. Lopez
Mr. Cody Morrow

RE: New Mexico Salt Water Disposal Company Station 11
NW/4 NW/4, Section 21 T10S-R34E
Lea County, New Mexico

Gentlemen:

This letter is in response to a letter dated June 2, 2003 from Mr. Joseph R. Lopez concerning items to be addressed at the subject site. Attached is a letter from CMB Environmental and Geological Services, Inc., that outlines a proposal to address the items contained in Mr. Lopez's letter. In a previous telecon to Mr. Morrow, I reported that NMSWDC reacted quickly to the discharge and immediately ordered and then installed three new 1,000 barrel fiberglass tanks to replace the older steel tanks. Not only did this increase our storage capacity at the site by a factor of six, it also provides for storage facilities that will not corrode or otherwise deteriorate from chemical action. The berm is in the process of being upgraded. If you have any questions concerning the CMB proposal, please advise.

It is my understanding that Mr. Bob Watson of our office has been working on the application for a business lease for this site and if you have not received this application, you should be receiving it shortly.

Sincerely,

NEW MEXICO SALT WATER DISPOSAL COMPANY, INC.

John C. Maxey, Jr.
Agent

JCM/sr/microsftwrd/jcmltrs/NMSWDCOStation11
Enclosure

RECEIVED AUG 1 8 2003

PATRICK H. LYONS
COMMISSIONER

State of New Mexico
Commissioner of Public Lands
310 OLD SANTA FE TRAIL
P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE
Phone (505) 827-5760
Fax (505) 827-5766
www.nmstatelands.org

August 18, 2003

New Mexico Salt Water Disposal Company Inc.
John C. Maxey, Jr.
PO Box 1518
Roswell, New Mexico 88201

RE: New Mexico Salt Water Disposal
Company Station 11
NW/4 NW/4 Section 21 T10S-R34E
Lea County, New Mexico

Dear Mr. Maxey,

I have reviewed the plan submitted through New Mexico Saltwater Disposal Company by CMB Environmental. The New Mexico State Land Office (NMSLO) appreciates the fact that you are working in cooperation with us to address the environmental concerns regarding this site.

I think the plan is very complete from a subsurface and groundwater protection and evaluation standpoint. I am assuming that after the sampling and data evaluation process is complete that a final reclamation plan will be prepared and submitted to the NMSLO. Within the final reclamation plan I encourage you to address not only subsurface and groundwater issues, but also recognize the surface damages present due to the facility in Section 21.

Once again thank you for addressing the problem in a timely manner. If you have any question please feel free to contact me at (505) 827-1245

Sincerely,

Cody C. Morrow
Environmental Specialist

District I
625 N. French Dr., Hobbs, NM 88240
District II
811 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Contact
New Mexico Salt Water Disposal Company, Inc.	John C. Maxey, Jr.
Address	Telephone No.
P. O. Box 1518 Roswell, NM 88202	505/622-3770
Facility Name	Facility Type
Station 11	Pumping Station

Surface Owner	Mineral Owner	Lease No.
State of New Mexico	State of New Mexico	Unleased

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	21	10S	31E					Chaves

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Produced Water	20 bbl	None
Source of Release	**Date and Hour of Occurrence**	**Date and Hour of Discovery**
Tanks	4-17-03	4-18-03
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Truck volume has increased. Not enough storage. Ordered 3 new 1000 bbl tanks

Describe Area Affected and Cleanup Action Taken.*

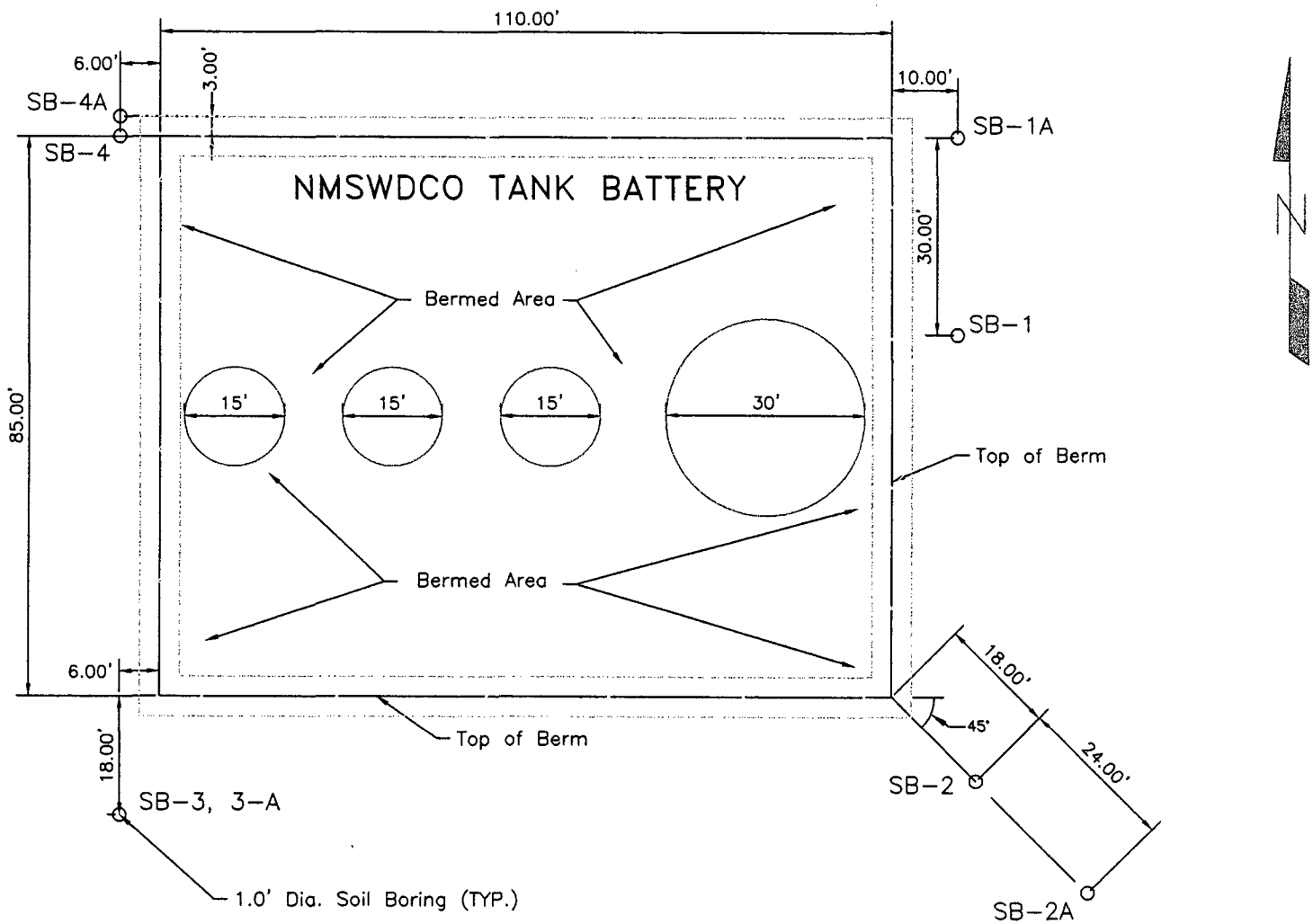
Produced water remained inside tank berm.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION
Printed Name: John C. Maxey, Jr.	Approved by District Supervisor:
Title: Agent	Approval Date: / Expiration Date:
Date: 5-6-03 Phone: 505/622-3770	Conditions of Approval: / Attached ☐

Attach Additional Sheets If Necessary Ext 224

Mailed Hobbs OCD 5/8/03



CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC.

SITE INVESTIGATION

SOIL BORING LOCATION MAP

Clayton M. Barnhill 02/04
NMED / USTB Certified Scientist #246

BY: [redacted] JOB N[redacted]001

SCALE:

CMB Environmental & Geological Services, Inc.
PO Box 2304
1208 Highland Road
Roswell, NM 88202-2304

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-1**
TOTAL DEPTH: **11'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**NM SW Disposal Co.**	DRILLING CO.:	**Atkins Engineering**
SITE LOCATION:	**Sec. 21 T10S R34E**	DRILLER:	**Mort Bates**
JOB NO.:	**NMSWDCO2003-01**	RIG TYPE:	**Mobile Drill B-58**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Hollow Stem Auger**
PROJECT MANAGER:	**John Maxey, Jr.**	SAMPLING METHODS:	**Split Spoon**
DATES DRILLED:	**10/14/03**	HAMMER WT./DROP	**140 lb., 30" inch**

NOTES:

⧖ Water level during drilling
⧗ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Blows / ft.	CL ppm	BORING COMPLETION	WELL DESCRIPTION
0		SW	SW: Tan Brown Sand, No Hydrocarbon Odor or Staining', Medium grained, well sorted sand, clayey @ 8', 9'-11': Non-Detect TPH , Non Detect BTEX, CL=1800 PPM	0'-2'	50/24"	NA		Drill Cuttings / backfill from surface to 8' BGS
5		SW		4'-6'	50/24"	NA		
10				9'-11'	50/24"	1800 PPM		Bentonite @ TD T.D. 11'

CMB Environmental & Geological Services, Inc.
PO Box 2304
1208 Highland Road
Roswell, NM 88202-2304

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-2**
TOTAL DEPTH: **16'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**NM SW Disposal Co.**	DRILLING CO.:	**Atkins Engineering**
TE LOCATION:	**Sec. 21 T10S R34E**	DRILLER:	**Mort Bates**
JOB NO.:	**NMSWDCO2003-01**	RIG TYPE:	**Mobile Drill B-58**
GGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Hollow Stem Auger**
ROJECT MANAGER:	**John Maxey, Jr.**	SAMPLING METHODS:	**Split Spoon**
TES DRILLED:	**10/14/03**	HAMMER WT./DROP	**140 lb., 30" inch**

OTES:

▽ Water level during drilling
▼ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Blows / ft.	CL ppm	BORING COMPLETION	WELL DESCRIPTION
0		SW	SW: Tan Brown Sand, No Hydrocarbon Odor or Staining', Medium grained, well sorted sand, clayey @ 8', 0'-2': Cl=330 PPM, TPH=170 PPM, BTEX= Non-Detect, From 2'-16': Non-Detect TPH , Non Detect BTEX, CL=1100 PPM @ 14'-16' BGS	0'-2'	50/24"	330 PPM		Drill Cuttings / backfill from surface to 9' BGS
		SW		4'-6'	50/24"	580 PPM		
10				9'-11'	50/24"	500 PPM		Bentonite @ TD-9' BGS
15		SW		14'-16'	50/24"	1100 PPM		T.D. 16'
20								

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1208 Highland Road
Roswell, NM 88202-2304

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-3**
TOTAL DEPTH: **11'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**NM SW Disposal Co.**	DRILLING CO.:	**Atkins Engineering**
SITE LOCATION:	**Sec. 21 T10S R34E**	DRILLER:	**Mort Bates**
JOB NO.:	**NMSWDCO2003-01**	RIG TYPE:	**Mobile Drill B-58**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Hollow Stem Auger**
PROJECT MANAGER:	**John Maxey, Jr.**	SAMPLING METHODS:	**Split Spoon**
DATES DRILLED:	**10/14/03**	HAMMER WT./DROP	**140 lb., 30" inch**

NOTES:

▽ Water level during drilling
▼ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Blows / ft.	CL ppm	BORING COMPLETION	WELL DESCRIPTION
0		SW	SW: Tan Brown Sand, No Hydrocarbon Odor or Staining', Medium grained, well sorted sand, clayey @ 8', 9'-11': Non-Detect TPH , Non Detect BTEX, CL=3600 PPM	0'-2'	50/24"	NA		Drill Cuttings / backfill from surface to 8' BGS
		SW		4'-6'	50/24"	NA		
10				9'-11'	50/18"	3800 PPM		Bentonite @ TD
15								T.D. 11'
20								

CMB Environmental & Geological Services, Inc.
PO Box 2304
1208 Highland Road
Roswell, NM 88202-2304

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-4**
TOTAL DEPTH: **16'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**NM SW Disposal Co.**	DRILLING CO.:	**Atkins Engineering**
SITE LOCATION:	**Sec. 21 T10S R34E**	DRILLER:	**Mort Bates**
JOB NO.:	**NMSWDCO2003-01**	RIG TYPE:	**Mobile Drill B-58**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Hollow Stem Auger**
PROJECT MANAGER:	**John Maxey, Jr.**	SAMPLING METHODS:	**Split Spoon**
DATES DRILLED:	**10/14/03**	HAMMER WT./DROP	**140 lb., 30" inch**

NOTES:

▽ Water level during drilling
▼ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Blows / ft.	CL ppm	BORING COMPLETION	WELL DESCRIPTION
0		SW	SW: Tan Brown Sand, No Hydrocarbon Odor or Staining', Medium grained, well sorted sand, clayey @ 8', 0'-2': Cl=1800 PPM, From 0'-16': Non-Detect TPH , Non Detect BTEX, CL=3400 PPM @ 14'-16' BGS	0'-2'	50/24"	1600 PPM		Drill Cuttings / backfill from surface to 9' BGS
		SW		4'-6'	50/12"	88 PPM		
10				9'-11'	50/24"	2200 PPM		Bentonite @ TD-9' BGS
15		SW		14'-16'	50/24"	3400 PPM		T.D. 16'
20								

CMB Environmental & Geological Services, Inc.
PO Box 2304
1208 Highland Road
Roswell, NM 88202-2304

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-1A**
TOTAL DEPTH: **36'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**NM SW Disposal Co.**	DRILLING CO.:	**Atkins Engineering**
SITE LOCATION:	**Sec. 21 T10S R34E**	DRILLER:	**Mort Bates**
JOB NO.:	**NMSWDCO2003-02**	RIG TYPE:	**Mobile Drill B-58**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Hollow Stem Auger**
PROJECT MANAGER:	**John Maxey, Jr.**	SAMPLING METHODS:	**Split Spoon**
DATES DRILLED:	**11/19/03**	HAMMER WT./DROP	**140 lb., 30" inch**

NOTES:

⧖ Water level during drilling
⧗ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Blows / ft.	CL ppm	BORING COMPLETION	WELL DESCRIPTION
0		SW	SW: Tan Brown Sand, No Hydrocarbon Odor or Staining', Medium grained, well sorted sand, *caliche nodules* @ 9'-19', 32 PPM TPH @ 0'-2', Non Detect BTEX, 280 PPM TPH @ 9'-11', minor BTEX, 14'-16' 55 PPM TPH, Non Detect BTEX	0'-2'	24"/wc	120 PPM		Drill Cuttings / backfill from surface to 10' BGS
		SW		4'-6'	24"/wc	NA		
-10				9'-11'	100/6"	380 PPM		
-15		SW		14'-16'	100/18	1900 PPM		Bentonite @ TD to 10' BGS
-20		SC	SC: Tan Brown Clayey Sand , No Hydrocarbon Odor or staining.<55 PPM TPH @ 14'-16', Non Detect BTEX 14'-36', and Non Detect TPH 16'-TD	19'-21'	50/24"	1800 PPM		
-25		SC		24'-26'	50/24"	3700 PPM		
-30		CH	CH: Brown Tight Fat Clay, silty 29–31', very plastic like, Non detect BTEX and TPH	29'-31'	50/24"	5000 PPM		
-35				34'-36'	50/24"	2000 PPM		T.D. 36'
-40								

CMB Environmental & Geological Services, Inc.
PO Box 2304
1208 Highland Road
Roswell, NM 88202-2304

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-2A**
TOTAL DEPTH: **36'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**NM SW Disposal Co.**	DRILLING CO.:	**Atkins Engineering**
SITE LOCATION:	**Sec. 21 T10S R34E**	DRILLER:	**Mort Bates**
JOB NO.:	**NMSWDCO2003-02**	RIG TYPE:	**Mobile Drill B-58**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Hollow Stem Auger**
PROJECT MANAGER:	**John Maxey, Jr.**	SAMPLING METHODS:	**Split Spoon**
DATES DRILLED:	**11/19/03**	HAMMER WT./DROP	**140 lb., 30" inch**

NOTES:

⧖ Water level during drilling
⧗ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Blows / ft.	CL ppm	BORING COMPLETION	WELL DESCRIPTION
0		SW	SW: Tan Brown Sand, No Hydrocarbon Odor or Staining', Medium grained, well sorted sand, caliche nodules @ 4'-19', Non Detect TPH @ 0'-2', Non Detect BTEX, Non Detect TPH @ 9'-11', Non Detect BTEX, 14'-16' Non Detect TPH, Non Detect BTEX	0'-2'	24"/wc	350 PPM		Drill Cuttings / backfill from surface to 10' BGS
		SW		4'-6'	50/12"	NA		
-10				9'-11'	50/18"	1400 PPM		
-15		SW		14'-16'	50/6"	900 PPM		Bentonite @ TD to 10' BGS
-20		SC	SC: Tan Brown Clayey Sand , No Hydrocarbon Odor or staining, Non Detect TPH @ 14'-36', Non Detect BTEX 14'-36'	19'-21'	50/24"	870 PPM		
-25		SC		24'-26'	50/24"	690 PPM		
-30		CH	CH: Brown Tight Fat Clay, silty 29–31', very plastic like, Non detect BTEX and TPH	29'-31'	50/24"	1700 PPM		
-35		CH		34'-36'	50/24"	1000 PPM		T.D. 36'
-40								

CMB Environmental & Geological Services, Inc.
PO Box 2304
1208 Highland Road
Roswell, NM 88202-2304

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-3A**
TOTAL DEPTH: **36'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**NM SW Disposal Co.**	DRILLING CO.:	**Atkins Engineering**
SITE LOCATION:	**Sec. 21 T10S R34E**	DRILLER:	**Mort Bates**
JOB NO.:	**NMSWDCO2003-01**	RIG TYPE:	**Mobile Drill B-58**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Hollow Stem Auger**
PROJECT MANAGER:	**John Maxey, Jr.**	SAMPLING METHODS:	**Split Spoon**
DATES DRILLED:	**11/20/03**	HAMMER WT./DROP	**140 lb., 30" inch**

NOTES:

▽ Water level during drilling
▼ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Blows / ft.	CL ppm	BORING COMPLETION	WELL DESCRIPTION
0		SW	SW: Tan Brown Sand, No Hydrocarbon Odor or Staining', Medium grained, well sorted sand, caliche nodules @ 4'-19', Non Detect TPH @ 0'-2', Non Detect BTEX, Non Detect TPH @ 9'-11', Non Detect BTEX, 14'-16' Non Detect TPH, Non Detect BTEX	0'-2'	31/24"	NA		Drill Cuttings / backfill from surface to 10' BGS
5		SW		4'-6'	50/12"	3700 PPM		
10		SW		9'-11'	50/06"	510 PPM		
15		SW		14'-16'	50/12"	570 PPM		Bentonite @ TD to 10' BGS
20		SC	SC: Tan Brown Clayey Sand , No Hydrocarbon Odor or staining, Non Detect TPH @ 14'-36', Non Detect BTEX 14'-36'	19'-21'	50/24"	880 PPM		
25		SC		24'-26'	50/24"	3200 PPM		
30		SC		29'-31'	50/24"	5900 PPM		
35		CH	CH: Brown Tight Fat Clay@ 32', silty 29'-36', very plastic like, Non detect BTEX and TPH, Sent core sample to DBS&A Lab for Hydraulic Conductivity and porosity analysis.	34'-36'	84/24"	1900 PPM		T.D. 36'
40								
45								

CMB Environmental & Geological Services, Inc.
PO Box 2304
1208 Highland Road
Roswell, NM 88202-2304

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-4A**
TOTAL DEPTH: **31'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**NM SW Disposal Co.**	DRILLING CO.:	**Atkins Engineering**
SITE LOCATION:	**Sec. 21 T10S R34E**	DRILLER:	**Mort Bates**
JOB NO.:	**NMSWDCO2003-02**	RIG TYPE:	**Mobile Drill B-58**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Hollow Stem Auger**
PROJECT MANAGER:	**John Maxey, Jr.**	SAMPLING METHODS:	**Split Spoon**
DATES DRILLED:	**11/20/03**	HAMMER WT./DROP	**140 lb., 30" inch**

NOTES:

▽ Water level during drilling
▼ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Blows / ft.	CL ppm	BORING COMPLETION	WELL DESCRIPTION
0		SW	SW: Tan Brown Sand, No Hydrocarbon Odor or Staining', Medium grained, well sorted sand, caliche nodules @ 4'-19', Non Detect TPH @ 0'-2', Non Detect BTEX, Non Detect TPH @ 4'-11' & Non Detect BTEX	0'-2'	50/24"	160 PPM		Drill Cuttings / backfill from surface to 10' BGS
		SW		4'-6'	50/12"	800 PPM		
-10				9'-11'	52/6"	2100 PPM		
-15		SW		14'-16'	50/12"	3400 PPM		Bentonite @ TD to 10' BGS
-20		SC	SC: Tan Brown Clayey Sand , No Hydrocarbon Odor or staining. Water Sample from 30.82' BGS Cl = 45000 PPM, 26 PPM Acetone, all other VOC's Non-Detect, PAH's = ND, Mecury = ND RCRA8=ND	19'-21'	44/24"	4500 PPM		
-25		SC		24'-26'	62/24"	5300 PPM		
-30		CH	CH: Brown Tight Fat Clay, silty 29'-31', Perched Water @ 30.82' BGS Sampled for PAH's, VOC's, RCRA 8 Metals, TDS, Chloride	29'-31'	63/12"	3900 PPM		T.D. 31'
-35		CH		34'-36'				
-40								

CMB Environmental & Geological Services, Inc. Boring ID: SB-1

Project: MSA NM Salt Water Disposal Co. Sheet: 1 OF 1
Location: NW¼ NW¼ Sec 21 T. 10S. R 34E Lea Co. NM
Client: New Mexico Salt Water Disposal Co Job number: NMSWD2003-01
Driller: MOKT BATES - ATKINS DRILLING Total depth: 11'
Drilling method: HSA W/ Spl. T Spoon MOBILE DRILL B-53 Boring diameter: 8"¼ O.D. Auger
Boring date: 10/14/03 @ 0918 hr. Logged by: CMB
Water level: N/A Date measured:

GPS: N 33° 26' 15.7"
W 103° 28' 30.3"

depth (ft)	SAMPLE interval	SAMPLE number	SAMPLE recovery (inches)	standard penetration test results	SOIL DESCRIPTION Color, soil type, relative density or consistency, mineralogy, USGS classification moisture content	graphic log	COMMENTS Monitoring well installation, geotechnical properties, analytical tests, instrumentation
0	0-2'		24"		0'-4': Course gr. well sorted Sand - no fines No odor — 5-Reddish Brown		SW: Reddish Brown
	4-6'		24"		4'-6': Clayey Sand. Coarse gr. well sorted Sand. 60% 40% Clay: - Gray - Stiff		SC
10							
	9-11'		24"	@10:00	Clayey Sand: — Brown — Reddish Brown Same as above Increase Clay @ 8' Caliche @ 9'-11' a/o 10'		SC Caliche @ 10'
20							
30							

CMB Environmental & Geological Services, Inc. Boring ID: SB-2 @ 10:06

Project: MSA NM Salt H2O Disposal Co. Sheet: 1 of 1
Location: NW 1/4, NW 1/4 Sec 21 T10S R34E
Client: New Mexico Salt Water Disposal Co. Job number: NMSWD2003-01
Driller: Mark Bates, Atkins Drilling Total depth: 16'
Drilling method: HSA MOBILE DRILL B-53 Boring diameter: 8 1/4" HSA
Boring date: 10/14/03 Logged by: CMB
Water level: N/A Date measured:

depth (ft)	SAMPLE interval	SAMPLE number	SAMPLE recovery (inches)	standard penetration test results	SOIL DESCRIPTION Color, soil type, relative density or consistency, mineralogy, USGS classification moisture content	graphic log	COMMENTS Monitoring well installation, geotechnical properties, analytical tests, instrumentation
	0-2		24"	10:15	Sand: med-coarse gr. well sorted, little or no fines. Spt-0-2'		SW
	4'-6'		6"	10:30	Caliche (white mixed with Sand. 4'-6' = Spt rejection @4'-5' Hard Drilling		
	9-11		24"	@ 10:45	Brown Sand - mixed with Caliche.		SW 250 mg/L chloride field test.
	14-16'			12:40	white tan Caliche mixed with med-fine gr. well sorted Sand.		SW.

SB-N 33°26'15.5"
W 103°28'30.2"

CMB Environmental & Geological Services, Inc. Boring ID: SB-3 @ 10:55

Project: MSA NM Salt Water Disposal Company Sheet: 1 OF 1
Location: NW1/4, NW1/4, Sec 12, T16S R34E
Client: NM SWD Co- Job number: NM SWD 2003-01
Driller: MORT BATES, ATKINS Drilling Total depth: 111
Drilling method: HSA - MOBILE DRILL B- Boring diameter: 8 1/4" HSA
Boring date: 10/14/03 Logged by: CMB
Water level: N/A. Date measured:

depth (ft)	SAMPLE interval	SAMPLE number	SAMPLE recovery (inches)	standard penetration test results	SOIL DESCRIPTION Color, soil type, relative density or consistency, mineralogy, USGS classification moisture content	graphic log	COMMENTS Monitoring well installation, geotechnical properties, analytical tests, instrumentation
0	0-2'		24"		Sand: Red mixed w/ wh. fe Caliche: med gr. well sorted sand - Reddish brown.		
4	4-6		24"		Med gr. well sand - w/ wh. fe Caliche		Caliche w/ sand
5	9'-11'		18" @ 11:00		White: Caliche (fine) mixed with med. gr. well Sorted Sand. Brown - reddish brown.		
10							

N 33° 26' 15.8"
W 103° 28' 21.1"

CMB Environmental & Geological Services, Inc. Boring ID: SB-4C 11:30

Project: MSA NM Salt Water Disposal Co Sheet: 1 of 1
Location: NW1/4, NW1/4 Sec 21, T10S-R34E -
Client: NMSWD Co- Job number: NM3W0602003-A
Driller: MORT BATES ATKINS Drilling Total depth: 16'
Drilling method: HSA MOBILE DRILL B-53 Boring diameter: 8 1/4" HSA
Boring date: 10/14/03 Logged by: CMB
Water level: N/A Date measured:

depth (ft)	SAMPLE interval	SAMPLE number	SAMPLE recovery (inches)	standard penetration test results	SOIL DESCRIPTION Color, soil type, relative density or consistency, mineralogy, USGS classification moisture content	graphic log	COMMENTS Monitoring well installation, geotechnical properties, analytical tests, instrumentation
0'	0-2'		24"	11:30	Red Brown Sand - Caliche @ 2'	SW	
	4-6'		12"	11:40	Caliche mixed with med gr. well sorted Sand.	SC	
5'					No odor or staining.		
	9-11'		24"	@11:50	Caliche - white tan - pink Fine to med gr. Sand.	SC	250 ppm? Chlorides field tested.
10'	14-16'		24"	12:22'	Caliche - mixed with Clayey Red Sand.	SC	Non-detect in field.

N 33° 20.116'
W 103° 28.317'

CMB Environmental & Geological Services, Inc. Boring ID: SB-14

Project: MSA - NMSW Disposal Company
Location: NMSWD Co - Sec. 21 16S R34E
Client: NMSWDCo.
Driller: Mort Bates, Atkins Drilling
Drilling method: HSA - MOBILE DRILL B-58.
Boring date: 11/19/03
Water level:

Sheet: 1 of 1
Job number: NMSWDCo2303-02
Total depth:
Boring diameter: 8 1/4 HSA
Logged by: CMB
Date measured:

Started @ 0850 30'~~45~~' North of SB-1

depth (ft)	SAMPLE interval	number	recovery (inches)	standard penetration test results	SOIL DESCRIPTION: Color, soil type, relative density or consistency, mineralogy, USGS classification moisture content	graphic log	COMMENTS: Monitoring well installation, geotechnical properties, analytical tests, instrumentation
0	0'-2'	01	12"	WOH	0'-2': SW: med gr. well sorted sand - little or no fines Tan brown. No odor or stain	SW	Sampled 0'-2' @ 0900 2x4oz/6/Jar/None Chloride, BTEX, TPH 418.1
	4'-6'	02	NO	Sample	@ 7' BGS - Caliche w/ Sand. Tan brown.	Caliche	Field Test @ 250mg/L
10'	9'-11'	03	06"	100/~~24~~ 18"	9'-11' - Caliche white Tan - mixed w/ Sand.	Caliche	Sampled 9'-11' @ 10:37 BTEX, TPH, Chloride
	14'-16'	04	18"	100/18"	14'-16': Caliche mixed with med gr. Sand. Tan No odor or stain	Caliche	14'-16' Sampled @ 11:05 BTEX, TPH, Chloride
20'	19'-21'	05	24"	50/24"	19'-21': Clayey Sand Tan brown @ 19'	Caliche SC	Caliche 19'-21': Sampled @ 11:20 TPH, BTEX, Chloride Field test: 2000 ppm chloride
	24'-26'	06	24"	50/24"	24'-26': Clayey Sand, Tan med. gr. Sand. well sorted	SC	24'-26' - Sampled @ 11:36 TPH, BTEX, Chloride.
30'	29'-31'	07	24"	50/24	29'-31': @ 29' - Fat Clay	CH	29'-31': @ 11:54.
	34'-36'	08	24"	50/24"	Brown - Salty @ Top - Clean @ bottom. 34'-36': Fat Clay - Brown - plastic No odor or staining	CH	CH - Fat Clay @ 29'-36' - Field Test 250 ppm Cl. 34'-36' - Sampled @ 12:40 T.D. 36' TPH 418.1 BTEX 8021 Chloride
40'					T.D. 36' - Bentonite Seal - 36'-10'		
50'							
60'							

GPS Coordinates N 33 02 6.5" W 103 28' 30.3"

CMB Environmental & Geological Services, Inc. Boring ID: SB-2A

Project: MSA – NMSWDCO. Sheet: 1 of 1
Location: NW/NW Sec. 21, T10S, R. 34E.
Client: NMSWDCO. Job number: NMSWDCO 2003-02
Driller: Mort Bates Atkins Eng. Total depth: 36'
Drilling method: HSA Mobile Drill B-58 Boring diameter: 8 1/4" HSA
Boring date: 11/19/03 Logged by: CMB
Water level: Date measured:

Started @ 13:14

depth (ft)	SAMPLE interval	number	recovery (inches)	standard penetration test results	SOIL DESCRIPTION: Color, soil type, relative density or consistency, mineralogy, USGS classification moisture content	graphic log	COMMENTS: Monitoring well installation, geotechnical properties, analytical tests, instrumentation
0'	0'-2'	01	18"	WOH	0'-2': Tan Brown med gr. well sorted Sand - little or no fines.	SW	Sampled 0'-2' @ 13:20 2x4oz/G/None For TPH 418.1, BTEX 8021, Chlorides
	4'-6'	02	12"	50/12	4'-6' – Caliche mixed with Sand No staining or odor.	Caliche/Sand	4'-6' – No Sample.
10'	9'-11'	03	18"	50/18"	9'-11' – Caliche & Sand. med. gr.		9'-11' – Sampled @ 13:36. TPH, BTEX, Chlorides
	14'-16'	04	06"	50/06"	14'-16': Caliche, White Tan, Mixed w/ med gr. sand No odor or staining. well sorted sand.		Sampled 14'-16' @ 1350 TPH, BTEX, Chlorides
20'	19'-21'	05	24"	50/24"	19'-21': @17' Clayey Sand Tan, Brown, w/ Caliche. Nodules 20%	SC	Sampled 19'-21' @ 14:05 Chloride only.
	24'-26'	06	24"	50/24"	24'-26': Same as above @ 26 – clayey – may be clay fat clay.	SC	Sampled 24'-26' @ 14:20 Chloride only.
30'	29'-31'	07	24"	50/24	29'-31': Strong clayey Sand Brown → Strong 40% clay fraction.	SC	Sampled 29'-31' @ 14:45 Chloride only.
	34'-36'	08	24	50/24	34'-36': – Fat Clay CH – with some silt - Strong clay TD 36'	CH	Sampled 34'-36' @ 15:15 Chloride only. TD 36'
46'					Bentonite Backfill/Seal 36'-0'		

GPS Coordinates N33° 26.15.8" W 103° 28' 30.1"

CMB Environmental & Geological Services, Inc. Boring ID: SB-3A

Project: MSA - NMSWDCO. Sheet: 1 of 1
Location: NW 1/4, NW 1/4 Sec. 21 T 10S R 34E
Client: NMSWDCo. Job number: NMSWDC02003-02
Driller: MORT BATES ATKINS Engineering Total depth: 36'
Drilling method: HSA MOBILE DRILL B-53 Boring diameter: 8 1/4" HSA
Boring date: 11/20/03 Logged by: CMB
Water level: N/A Date measured:
Started @ 0825

GPS Coordinates: N 33°26'15.1" W 103°28'31.8"

depth (ft)	SAMPLE interval	number	recovery (inches)	standard penetration test results	SOIL DESCRIPTION Color, soil type, relative density or consistency, mineralogy, USGS classification moisture content	graphic log	COMMENTS Monitoring well installation, geotechnical properties, analytical tests, instrumentation
0'	0-2'	01	24"	31/24"	0'-2': 0'-1' Caliche Pad 1'-2': SW: med gr. Tan brown	SW	Sampled 0'-2' @ 0827 TPH, BTEX, Chloride
	4'-6'	02	12"	50/12"	med. gr. Sand. well sorted No staining or odor. 4'-6': Caliche, white, tan.		Sample 4'-6' @ 0845 TPH, BTEX, Chloride
10'	9'-11'	03	06"	50/06"	mixed w/ med gr. well sorted Sand.		9'-11' @ 09:00
	9'-11'				9'-11': Caliche - Sand mixture No staining or odor med. gr. well sorted Sand		TPH, BTEX, Chlorides.
	14'-16'	04	12"	50/12"	14'-16': Same as above. Caliche/sand mix. @ 16' - Clayey Sand;	SW SC	Sampled 14'-16' @ 0915 Chloride only
20'	19'-21'	05	24"	50/24"	19'-21': Brown - Clayey Sand - med. gr. well sorted Clay 20%	SC	19'-21' @ 0930 Chloride only.
	24'-26'	06	24"	50/24"	24'-26': Clayey Sand Brown w/ 10% Caliche nodules. No odor or staining		24'-26': @ 0945 Chloride only
30'	29'-31'	07	24"	50/24"	29'-31': Clayey Sand. No Caliche - med. gr. well sorted Sand No odor or staining	SC CL	29'-31' - @ 10:00 Chloride only. Fat Clay @ 32'
	34'-36'	08	24"	84/24"	34'-36': TD 36' - Fat Clay Brown - inorganic silts. 32'-36'	CH	Sampled 34'-36' @ 10:25 1 x 4oz/6/Jar/None For Chloride
40'					TD 36' - Took Sample For DAS & A Hydraulic Conductivity, Porosity analysis. - 4 6" Brass Tubes		
					Bentonite Seal 36'-10' BGS		

CMB Environmental & Geological Services, Inc. Boring ID: SB - 4A

Project: MSA - NMSWD Co - Sheet: 1 of 1
Location: NW 1/4 NW 1/4 Sec. 21 T10S R34E
Client: NMSWD Co - Job number: NMSWDCO 2002-02
Driller: MORT BATES ATKINS Engineering Total depth: 31'
Drilling method: HSA MOBILE DRILL B-58 Boring diameter: 8 1/4" HSA.
Boring date: 11/20/03 Logged by: CMB
Water level: N/A Date measured:
Started @ 10:00

depth (ft)	SAMPLE interval	number	recovery (inches)	standard penetration test results	SOIL DESCRIPTION Color, soil type, relative density or consistency, mineralogy, USGS classification moisture content	graphic log	COMMENTS Monitoring well installation, geotechnical properties, analytical tests, instrumentation
0'	0'-2'	01	24	50/24"	0'-2': SW: med gr. Sand. 0'-1' - Stiff caliche pad material	SW	Sampled 0'-2' @ 11:00 2x4oz/4oz/None for TPH 418.1, Chloride, BTEX.
	4'-6'	02	12"	50/12"	4'-6': SW: Tan Brown Caliche Sand Mixture No odor or Staining	SW	Sampled 4'-6' @ 11:11 TPH, Chloride, BTEX
10'	9'-11'	03	06"	52/06"	9'-11': Med gr Sand/ Caliche Mixture No odor or staining	SW	Sampled 9'-11' @ 11:27 TPH, BTEX, Chloride
	14'-16'	04	12"	50/12"	14'-16': Caliche Sand Mixture tan - med gr. Sand. beginning to become clay 10%	SC	Sample 14'-16' @ 11:45 Chloride only.
20'	19'-21'	05	24"	44/24"	19'-21': @ 17' Clayey Sand. @ 17' Brown - med gr. Sand. Clayey Sand.	SC	Sampled 19'-21' @ 12:00 Chloride only,
	24'-26'	06	24"	62/24"	24'-26': Clayey Sand. Brown No staining or odor.	SC	Sampled 24'-26' @ 12:20
30'	29'-31'			63/	29'-31' @ 27' drilling	CH	Sampled 29'-31' @ 12:45
	30.82'				Tight ca? Fat clay @ 27' wet Fat clay Brown - Inorganic silts. Perched water @ 30.82' BGS Resting on Clay zone TD-31' Saturated		TPH 418.1, BTEX 8021 Chloride Sampled H_2O @ 13:30 hour.
40'					Dry @ 34' Sampled 3x 40mL VOA's w/ $HgCl_2$ 1 x 500 plastic/None 1 x 1 liter/Amber/G/None		TDS, Chloride PAH's, 8270 VOC's 8260 RCRA 8 Metals
					Bentonite Seal 31' - 10' BGS Backfill 0' - 10'		

GPS: Coordinates: N 33° 26' 16.9" N 103° 28' 31.2"

FE-1 State of New Mexico
State Engineer

WELL SCHEDULE

Source of data: Obser ☒ Owner ☐ Other _____

Date FEB 26 1986 Record by K. FREEMAN & A. MASON

LOCATION: County Lea Map 96.1.1

OWNER Carl Johnson

DRILLER _____ Completed _____ 19__

TOPO SITUATION _____ Topo. Spot 1-25-91 Elev 4226

DEPTH 101 ft ☐ Rept ☒ Meas Use STOCK

CASING 6 5/8 in to _____ ft Log _____

PUMP: Type _____ Make _____

Ser.no./model _____ Size of dischg _____ in.

PRIME MOVER: Make _____ HP _____

Ser.no. Tubular STEEL TOWER Power/~~Fuel~~ WIND

PUMP DRIVE: ☐ Gear Head ☐ Belt Head ☐ Pump Jack

Make _____ Ser.no _____ ☐ VHS

WATER LEVEL: 32.47 ft ~~rept~~ meas 2/26 19 86 ~~above~~ below TC

_____ which is 1.35 ft above ~~below~~ LS

PERMANENT RP is Concrete block

which is 1.35 ft ~~above~~ below described MP and 0 ft above below LS

REMARKS Shown as "Lucky Windmill" on Topo

AQUIFER(S): K Site ID 332535103290801

Well No. ___ on Photo _____ DPN 25-05104

File No _____ Loc. No. 20.34.20.43310

Remarks cont. Discharges 60' west into a 30' x 5' DIAMeter STEEL STK Tank. A LARGE EARTHEN POND is located 25' N of this WINDMILL. An ABD. WELL at a 4331' is located 75' NW.

SKETCH:

INITIAL WATER-LEVEL MEASUREMENT	DEPTH TO WATER			
	Below MP			Below
	1st	2nd	3rd	LS
Date FEB 26, 19 84	36.00	37.00		32.47
Hour 1142 AM ~~PM~~ Obs KF/ABM	3.53	4.53		1.35
Not POA (X) POA ( )	32.47	32.47		31.12

W L meas after pump shut off_____ min. Pumping W L ( )

Remarks _____

QUALITY CONTROL SHEET — STATE ENGINEER

Date	Collector	POC	Remarks and Use	Cl.	SC	X
6/19/90	MFN-LH	DP	T66° Pumped 4 min	615	2464	
10/19/95	DW-CW	DP	T62°F POA	348	1670	

X = More Complete Analysis Available on Sample

Aquifer(s) K D.P.N. 25-05104

File No. _____ Location No. 10.34.20.43310

STATE ENGINEER
Technical Division

Owner Carl Johnson
Use Stock

	DEPTH TO WATER Below MP 1st	DEPTH TO WATER Below MP 2nd	DEPTH TO WATER Below LSD	WATER LEVEL ELEV
Date Feb 26, 1986	36.00	37.00	32.47	4226
Hour 11:40 (AM) PM Obs KF-ABM	3.53	4.53	1.35	31
Not POA (X) POA ( )	32.47	32.47	31.12	4195

W L meas after pump shut off _____ min. Pumping W L (
Remarks _____

Date Jan 25, 1991	50.00	53.00	33.02	4226
Hour 9:30 (AM) PM Obs C.W.	16.98	19.98	1.35	32
Not POA (X) POA ( )	33.02	33.02	31.67	4194

W L meas after pump shut off _____ min. Pumping W L (
Remarks There is now a 9'X9' conc. slab inside WM legs obscuring original EP

Date Jan 18, 1996				
Hour 1030 AM PM Obs KO				
Not POA (X) POA ( )				

W L meas after pump shut off _____ min. Pumping W L (
Remarks Wintergr - UT 107

Date _____ ___, 19___				
Hour _____ AM PM Obs _____				
Not POA ( ) POA ( )				

W L meas after pump shut off _____ min. Pumping W L (
Remarks _____

Latitude _____ Longitude 25-05104
File No _____ Location No 10.34.20.43310

T10S 33E. R. NW/4 Sec. 33

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
JUL 20, 1930	24.90 P	APR 30, 1976	28.20	FEB 26, 1986	26.78		
MAY 04, 1971	26.68 R	FEB 25, 1981	28.07 R	JAN 29, 1991	28.01 P		

HIGHEST 26.78 FEB 26, 1986
LOWEST 28.20 APR 30, 1976

DPN

GWSI Site ID: 332535 103290801

SITE ID: 332521103290201
LOCATION: 10S.34E.20.43311
OTHER ID: 12598
ELEVATION: 4226.00
USE: U
DEPTH:
GEO. UNIT: 210CRCS

Location: 10.34.20.43310
Other ID: 05104 1986 31.12
W.L.: Jan. 25, 1991 31.67

within 1 mile radius.
101' TD.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
SEP 01, 1970	37.01	APR 06, 1971	36.79 T	MAY 04, 1976	37.67	FEB 25, 1981	34.11 T

HIGHEST 37.01 SEP 01, 1970
LOWEST 37.67 MAY 04, 1976

SITE ID: 332500103270701
LOCATION: 10S.34E.27.14210
OTHER ID: 12866
ELEVATION: 4190.00
USE: H
DEPTH:
GEO. UNIT: 210CRCS

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS
MAY 04, 1976	54.92

SITE ID: 332501103270301
LOCATION: 10S.34E.27.14222
OTHER ID: 12599
ELEVATION: 4188.00
USE: S
DEPTH: 59
GEO. UNIT: 210CRCS

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
JUL 18, 1930	50.80	SEP 01, 1970	52.06 R	MAY 04, 1976	52.78	FEB 26, 1986	49.85

[redacted], 1932 50.93 APR 06, 1971 51.64 R FEB 12, 1981 52.30 JAN 25, 1991 50.78

HIGHEST 49.65 FEB 26, 1986
LOWEST 52.78 MAY 04, 1976

[redacted] ID: 332403103292601
[redacted]TION: 10S.34E.32.13144
[redacted] ID: 12600
[redacted]EVATION: 4207.00
[redacted]U
[redacted]H: 15
[redacted] UNIT: 210CRCS

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

[redacted]DATE	WATER LEVEL MS
[redacted] 06, 1954	6.85

[redacted] ID: 332406103244801
[redacted]CATION: 10S.34E.36.412134
[redacted] ID: 05001
[redacted]ATION: 4114.00
[redacted]E: S
[redacted]H:
[redacted] UNIT: 1210GLL

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS
[redacted]0, 1981	43.29

[redacted]: 12/04/95 PROVISIONAL GROUNDWATER DATA LEA COUNTY. PAGE 40

[redacted]E ID: 332852103234601
[redacted]CATION: 10S.35E.06.211134
[redacted] ID: 05017
[redacted]VATION: 4159.00
[redacted]E: S
[redacted]H:
[redacted] UNIT: 210CRCS

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

[redacted]DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
[redacted]10, 1981	105.95	APR 22, 1986	105.10	JAN 25, 1991	104.36

HIGHEST 104.36 JAN 25, 1991
LOWEST 105.95 APR 10, 1981

[redacted] ID: 332726103190301
[redacted]TION: 10S.35E.12.31214
[redacted]ER ID: 12602
[redacted]EVATION: 4072.00

Form WR-23 STATE ENGINEER OFFICE

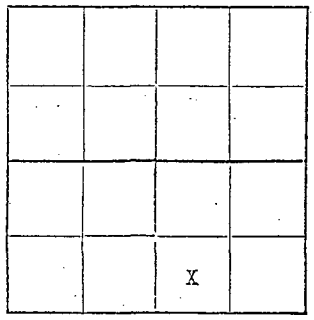
FIELD ENGR. LOG

WELL RECORD

NEW MEXICO STATE BR WATER WELL #2

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Humble Oil & Refining Company

Street and Number Box 2347

City Hobbs State New Mexico

Well was drilled under Permit No. - and is located in the SE ¼ SW ¼ SE ¼ of Section 36 Twp. 10-S Rge. 34-E

(B) Drilling Contractor Abbott Bros License No. -

Street and Number Box 637

City Hobbs State New Mexico

Drilling was commenced July 16 19 62

Drilling was completed July 16 19 62

Elevation at top of casing in feet above sea level Ground Level Total depth of well 85

State whether well is shallow or artesian shallow Depth to water upon completion 55-70

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1	55	70	15	water sand
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
7"	-	-	-	-	86	-	Slotted Pipe (gravel packed)	

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used
	none used				

Section 5 PLUGGING RECORD

Name of Plugging Contractor Lone Star Welding License No. -

Street and Number Box 277 City Lovington State New Mexico

Tons of Clay used - Tons of Roughage used - Type of roughage -

Plugging method used steel plate welded on top of csg Date Plugged 11-21-62 19

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used
			-

FOR USE OF STATE ENGINEER ONLY

Date Received

RECEIVED
DISTRICT II
ROSWELL, N. MEX.
1963 FEB 11 AM 8:38
STATE ENGINEER OFFICE

File No. Trans. Lea Use Location No. 10.34.36.434

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	2	2	-	Soil
2	18	16	-	Caliche
18	55	37	-	Sand
55	70	15	-	Water sand
70	85	15	-	Clay

L S Elev _____ _____
Depth to K _____ Trc _____
Elev of K _____ Trc _____

Loc. No. 10.34.36.434
Hydro. Survey _____ Field Check _____

SOURCE OF ALTITUDE GIVEN
Interpolated from Topo. Sheet _____
Determined by Inst. Leveling _____
Other _____

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

HUMBLE OIL & REFINING COMPANY

BY _____
Agent

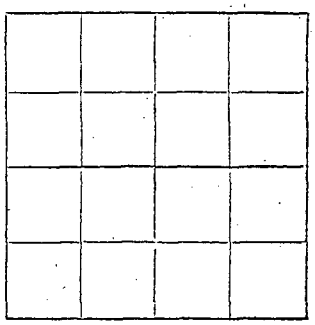
Form WR-23 STATE ENGINEER OFFICE

FIELD ENGR. LOG

WELL RECORD NEW MEXICO STATE BR WATER WELL #3

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Humble Oil & Refining Company
Street and Number Box 2347
City Hobbs State New Mexico
Well was drilled under Permit No. - and is located in the
SE ¼ SW ¼ SE ¼ of Section 36 Twp. 10-S Rge. 34-E
(B) Drilling Contractor Abbott Bros License No. -
Street and Number Box 637
City Hobbs State New Mexico
Drilling was commenced July 17 19 62
Drilling was completed July 17 19 62

Elevation at top of casing in feet above sea level Ground level Total depth of well 80
State whether well is shallow or artesian Depth to water upon completion 55-70

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1	55	70	15	water sand
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
7"	-	-	-	-	81	-	55	70
							Slotted	pipe
							(gravel	packed)

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used
	None used				

Section 5 PLUGGING RECORD

Name of Plugging Contractor Lone Star Welding License No. -
Street and Number Box 277 City Lovington State New Mexico
Tons of Clay used - Tons of Roughage used - Type of roughage -
Plugging method used steel plate welded on top of csg. Date Plugged November 21 19 62
Plugging approved by:

James A. Gilbreath
Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used
			-

FOR USE OF STATE ENGINEER ONLY

Date Received

ROSWELL, N. MEX.
DISTRICT II
STATE ENGINEER OFFICE
1962 FEB 11 AM 8:37

File No. Misc. Use Location No. 10.34.36.434

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	3	3	-	Soil
3	18	15	-	Caliche
18	55	37	-	Sand
55	70	15	-	Water sand
70	80	10	Blue	Clay

L S Elev
Depth to K Trc
Elev of K Trc

Loc. No. 10. 34. 36. 434

Hydro. Survey Field Check

SOURCE OF ALTITUDE GIVEN
Interpolated from Topo. Sheet
Determined by Inst. Leveling
Other

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

HUMBLE OIL & REFINING COMPANY

BY (signature)
Agent

Form WR-23 STATE ENGINEER OFFICE

FIELD TYPE LOG **WELL RECORD** NEW MEXICO STATE BR WATER WELL #1

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1

(Plat of 640 acres)

(A) Owner of well Humble Oil & Refining Company
Street and Number Box 2347,
City Hobbs State New Mexico
Well was drilled under Permit No. Unknown and is located in the
SE ¼ SW ¼ SE ¼ of Section 36 Twp. 10-S Rge. 34-E
(B) Drilling Contractor Abbott Bros License No. -
Street and Number Box 637
City Hobbs State New Mexico
Drilling was commenced July 11 19 62
Drilling was completed July 13 19 62

Elevation at top of casing in feet above sea level - Total depth of well 290
State whether well is shallow or artesian - Depth to water upon completion Dry Hole

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				Dry Hole
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
	None Used							

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used
	None Used				

Section 5 PLUGGING RECORD

Name of Plugging Contractor A. W. Thompson Drilling Co. License No. -
Street and Number 214 Midland Nat'l Bank Bldg City Midland State Texas
Tons of Clay used - Tons of Roughage used 10 sxs Type of roughage Cement
Plugging method used Cemented top of well Date Plugged July 14 19 62
Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used
1	25	Surface	10 sxs reg cement

FOR USE OF STATE ENGINEER ONLY

Date Received STATE ENGINEER OFFICE DISTRICT II ARTESIA 1963 FEB 11 AM 8:38

File No. - Use Location No. 10.34.36.434

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	3	3	-	Sand
3	18	15	-	Caliche
18	40	22	-	Clay
40	75	35	-	Blue Clay
75	105	30	-	Clay
105	110	5	-	Sand
110	160	50	-	Clay
160	170	10	-	Sand Water
170	255	85	-	Clay
255	260	5	White	Sand
260	290	30	-	Clay

L S Elev

Depth to K Trc

Elev of K Trc

Loc. No. 10.3436.434

Hydro. Survey Field Check

SOURCE OF ALTITUDE GIVEN

Interpolated from Topo. Sheet

Determined by Inst. Leveling

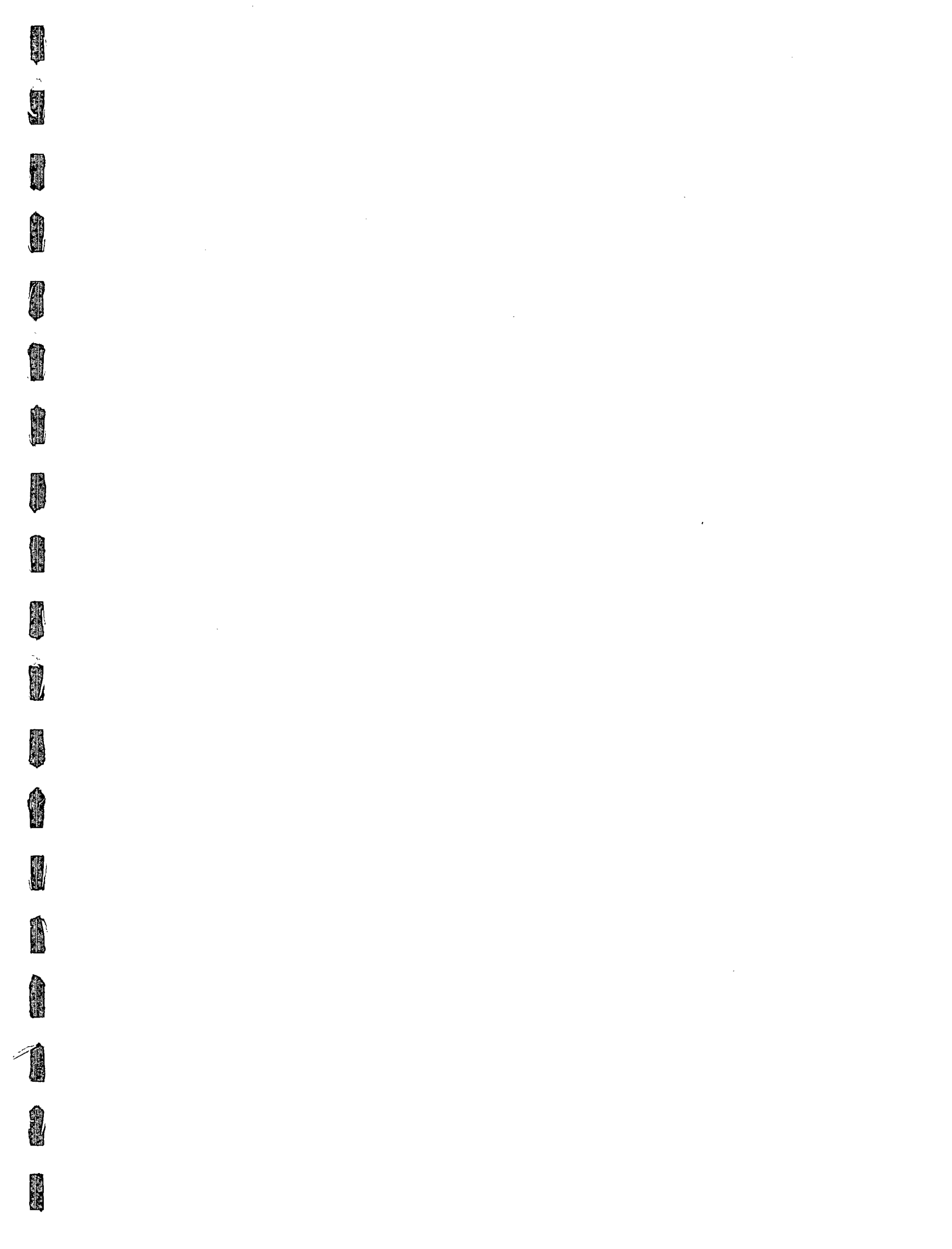
Other

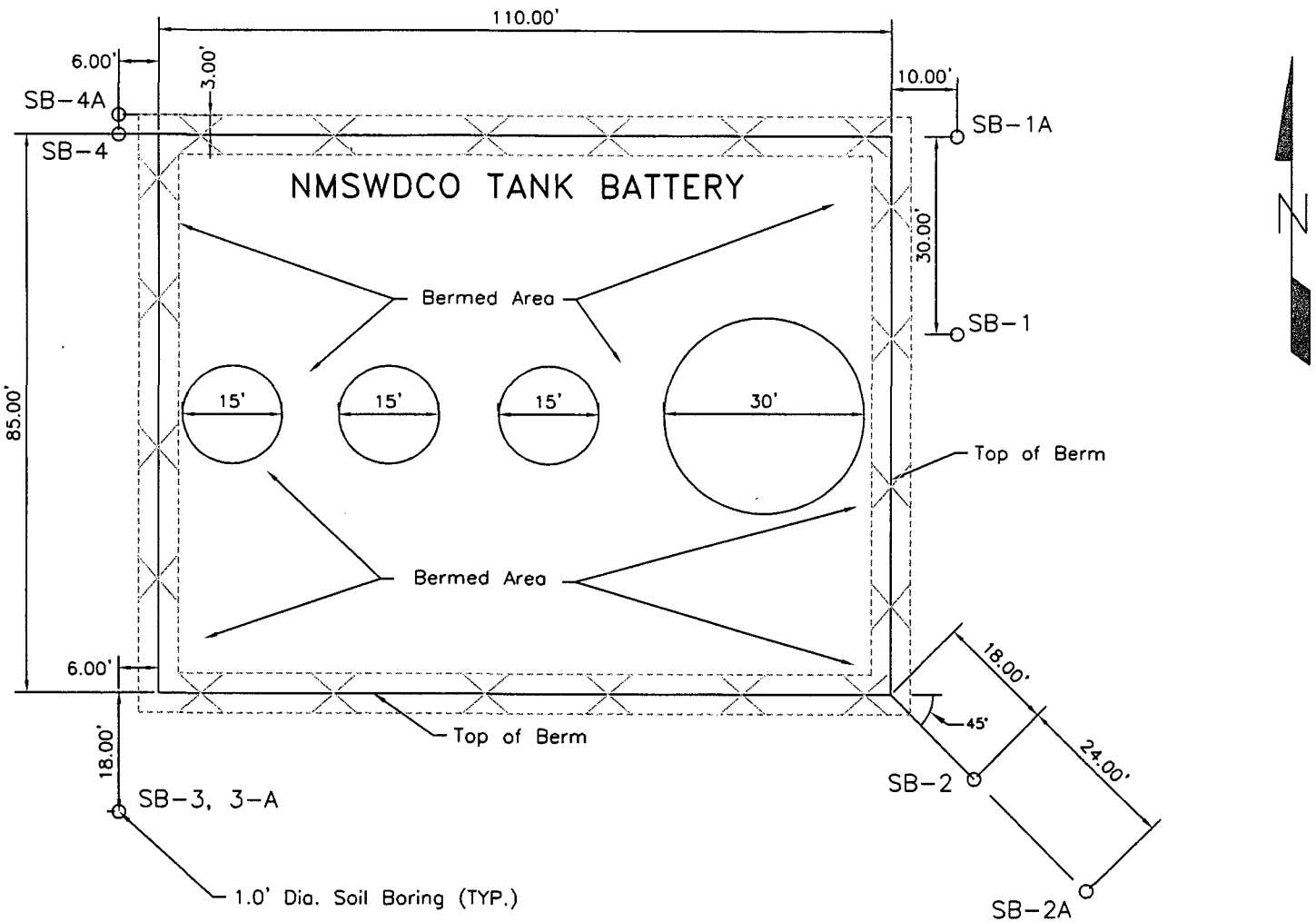
The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

HUMBLE OIL & REFINING COMPANY

BY

Agent





CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC.

SITE INVESTIGATION

SOIL BORING LOCATION MAP

Clayton M. Barnhill 02/04
NMED / USTB Certified Scientist #246

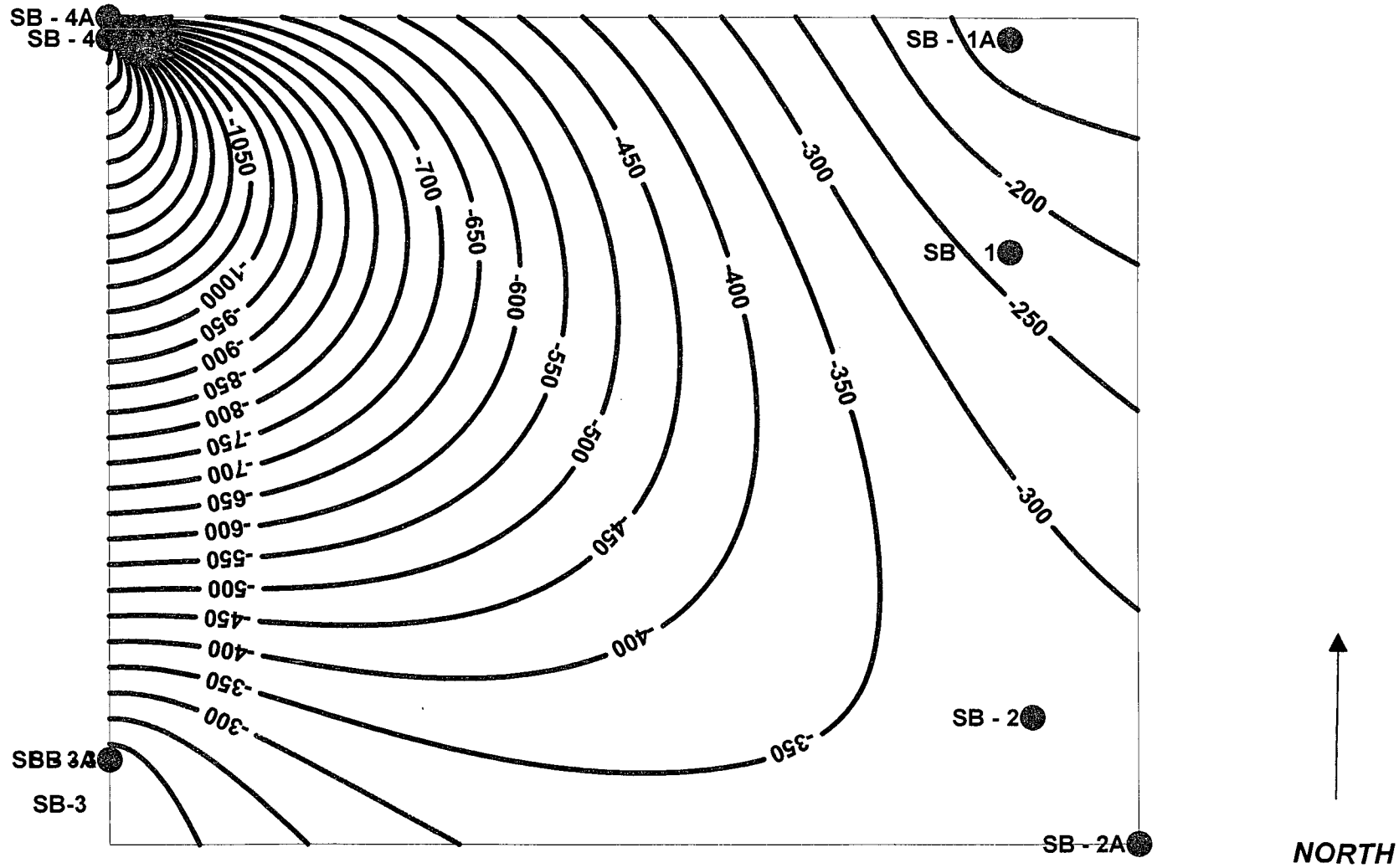
DRAWN BY: JOB NO. 403001

Soil Boring	***Depth: 0'-2'***	***4'-6'***	***9'-11'***	***14'-16'***	***19'-21'***	***24'-26'***	***29'-31'***	***34'-36'***
SB - 1			**ND**					
SB - 1A	**32**		**280**	**55**	**ND**	**ND**	**ND**	**ND**
SB - 2	**170**	**ND**	**ND**	**ND**				
SB - 2A	**ND**		**ND**	**ND**				
SB - 3			**ND**					
SB - 3A	**ND**	**ND**	**ND**					
SB - 4	**ND**	**ND**	**ND**	**ND**				
SB - 4A	**ND**	**ND**	**ND**				**ND(H2O)**	
Red Values Indicate TPH Concentrations above 1000 PPM TPH								

Soil Boring	Depth: 0'-2'	4'-6'	9'-11'	14'-16'	19'-21'	24'-26'	29'-31'	34'-36'
SB - 1			ND					
SB - 1A	ND		0.3	ND	ND	ND	ND	ND
SB - 2	ND	ND	ND	ND				
SB - 2A	ND		ND	ND				
SB - 3			ND					
SB - 3A	0.03	ND	ND				ND	
SB - 4	ND	ND	ND	ND				
SB - 4A	ND	ND	ND				ND(H2O)	
Red Values Indicate BTEX Concentrations above 1 PPM Total BTEX								

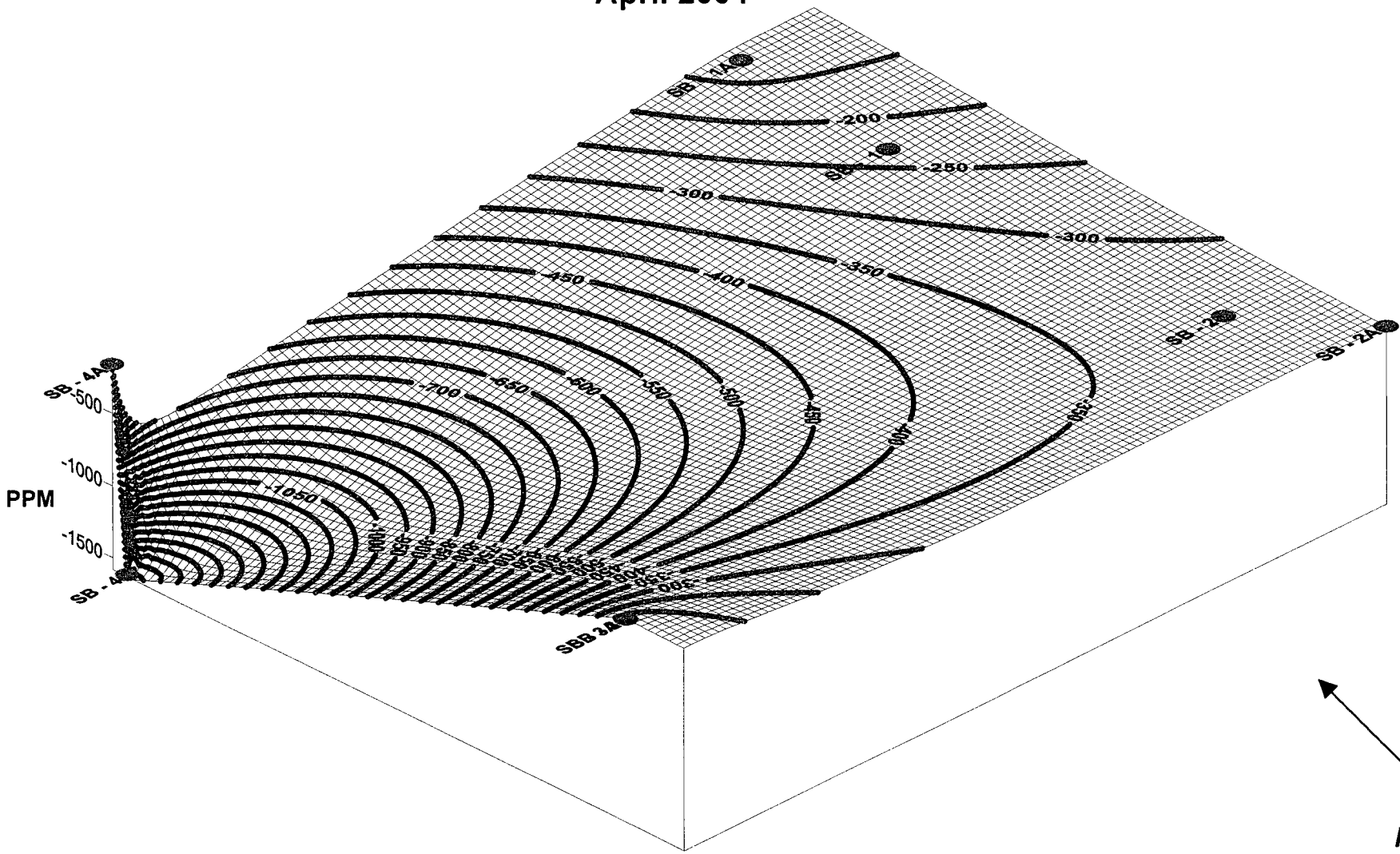
Soil Boring	Depth: 0'-2'	4'-6'	9'-11'	14'-16'	19'-21'	24'-26'	29'-31'	34'-36'
SB - 1			1800					
SB - 1A	120		380	1900	1800	3700	5000	2000
SB - 2	330	580	500	1100				
SB - 2A	350		1400	900	870	690	1700	1000
SB - 3			3600					
SB - 3A	170	3700	510	570	880	3200	5900	1900
SB - 4	1600	88	2200	3400				
SB - 4A	160	800	2100	3400	4500	8300	3900	
Red Values Indicate Chloride Concentrations above 250 PPM Chloride								

NMSWDCO
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



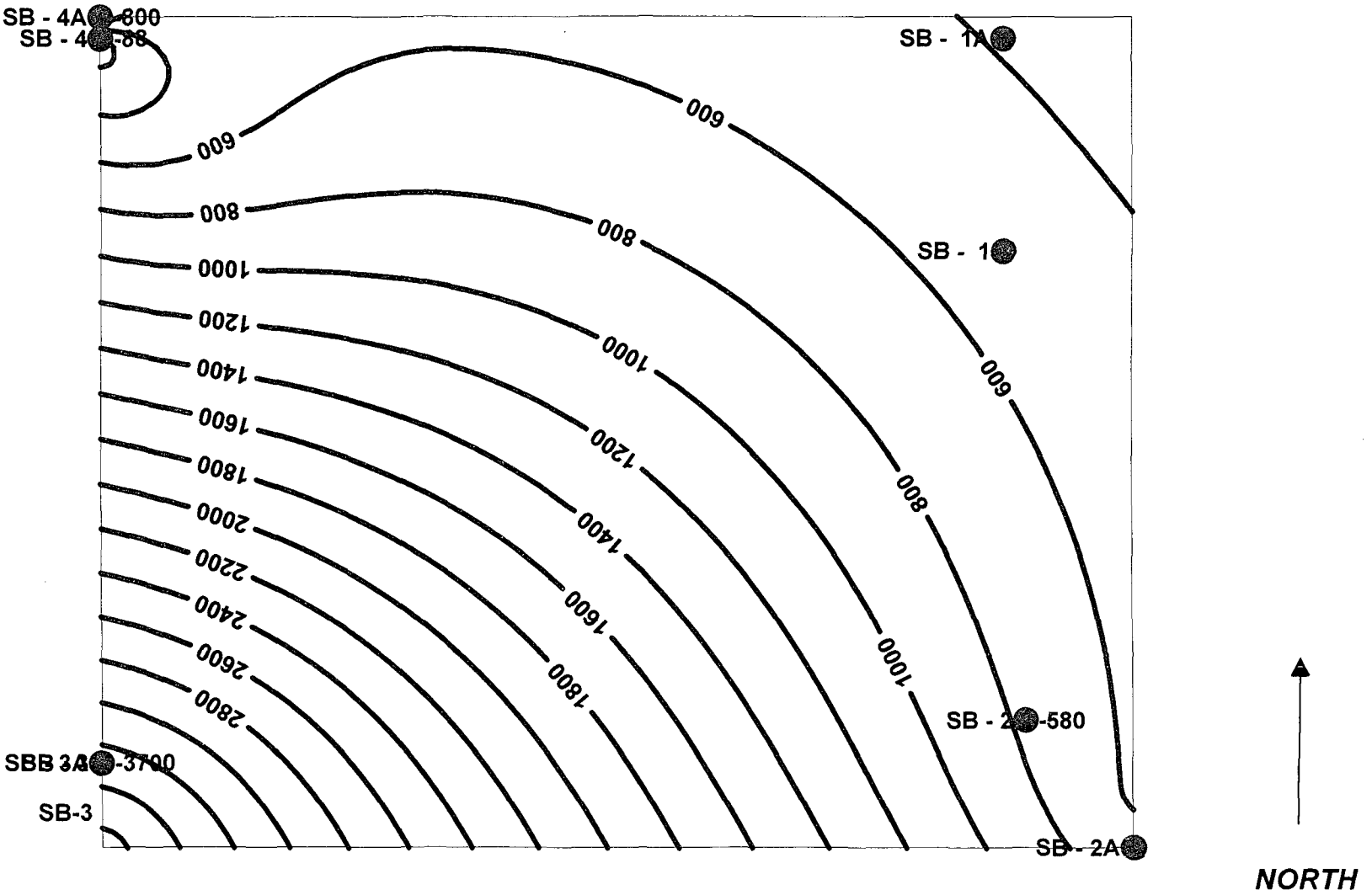
Contour Map of Soil Chloride Concentrations 0'-2' feet below ground surface
Contour Interval 50 PPM Chloride, red values greater than 300 PPM
Soil Boring Locations are labeled and indicated by blue symbol

NMSWDCO 3-D View of Chloride Concentrations 0'-2' BGS
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



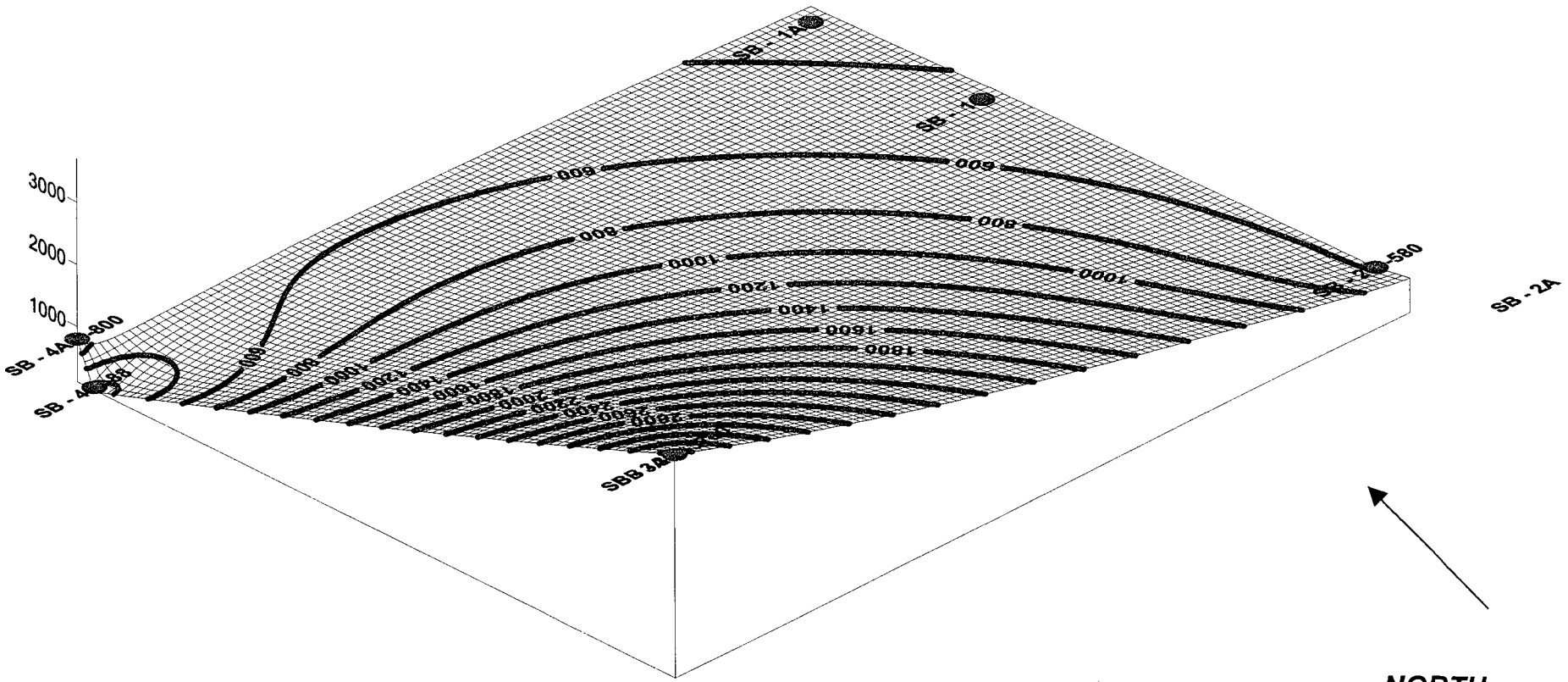
Contour Map of Soil Chloride Concentrations 0'-2' feet below ground surface
Contour Interval 50 PPM Chloride, red values greater than 300 PPM
Soil Boring Locations are labeled and indicated by blue symbol

NMSWDCO
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



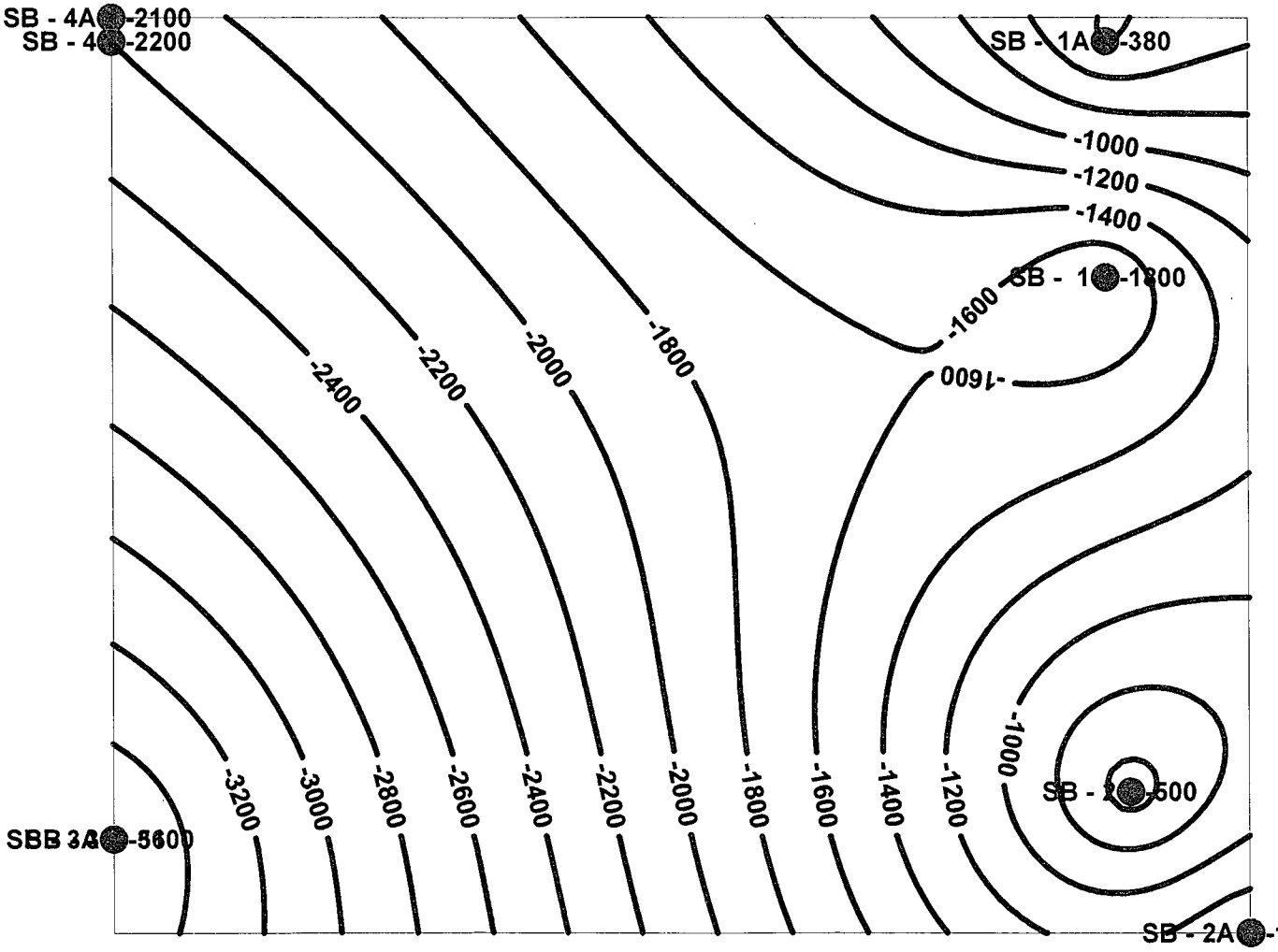
Contour Map of Soil Chloride Concentrations 4'-6' feet below ground surface
Contour Interval 200 PPM Chloride, red numbers to right of soil borings are chloride concentration in PPM
Soil Boring Locations are labeled and indicated by blue symbol

NMSWDCO 3-D View of Chloride Concentrations 4'-6' feet BGS
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



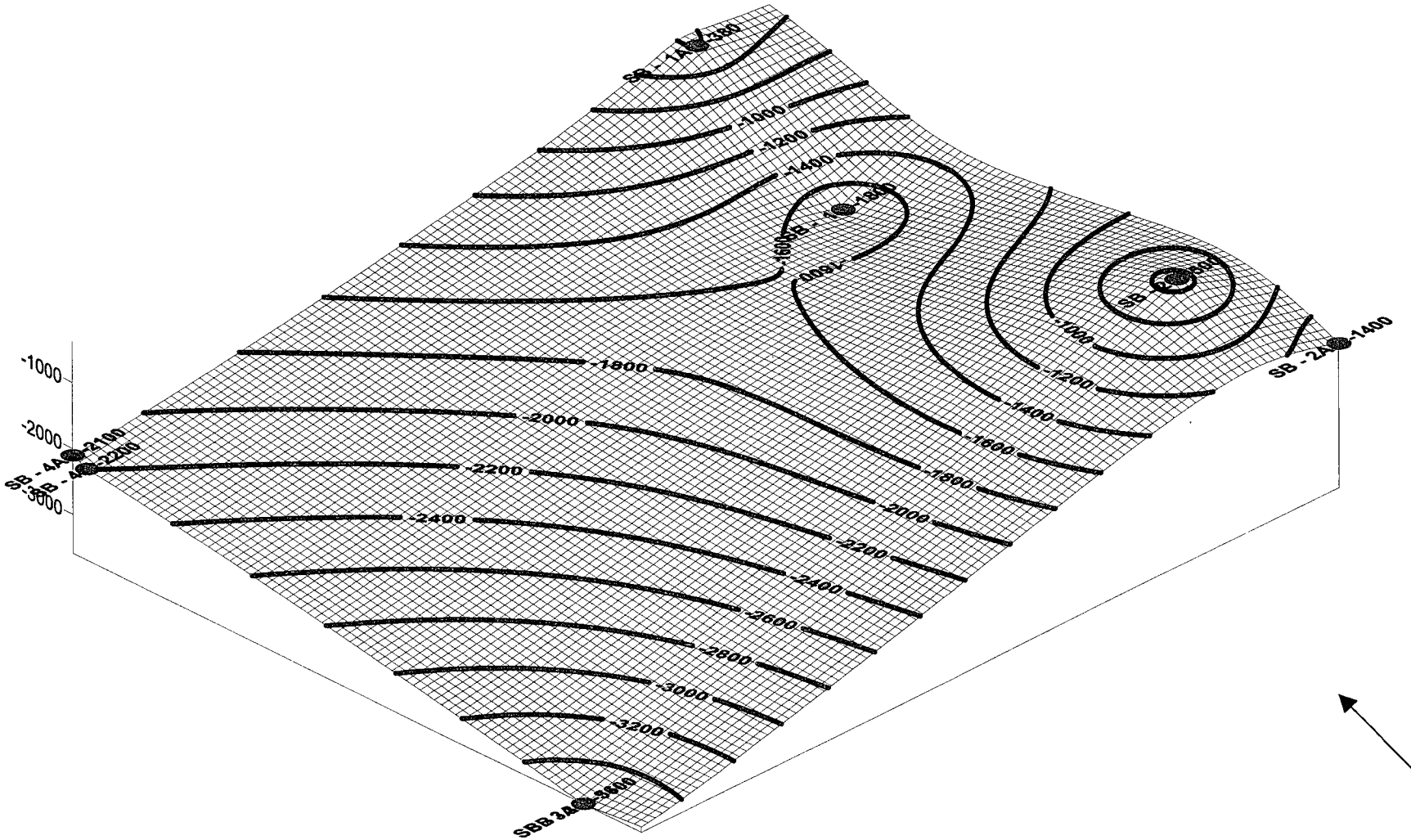
Contour Map of Soil Chloride Concentrations 4'-6' feet below ground surface
Contour Interval 200 PPM Chloride, red numbers to right of soil borings are chloride concentration in PPM
Soil Boring Locations are labeled and indicated by blue symbol. SB-3 and SB-3A are same location.

NMSWDCO Chloride Concentrations 9'-11' feet BGS
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



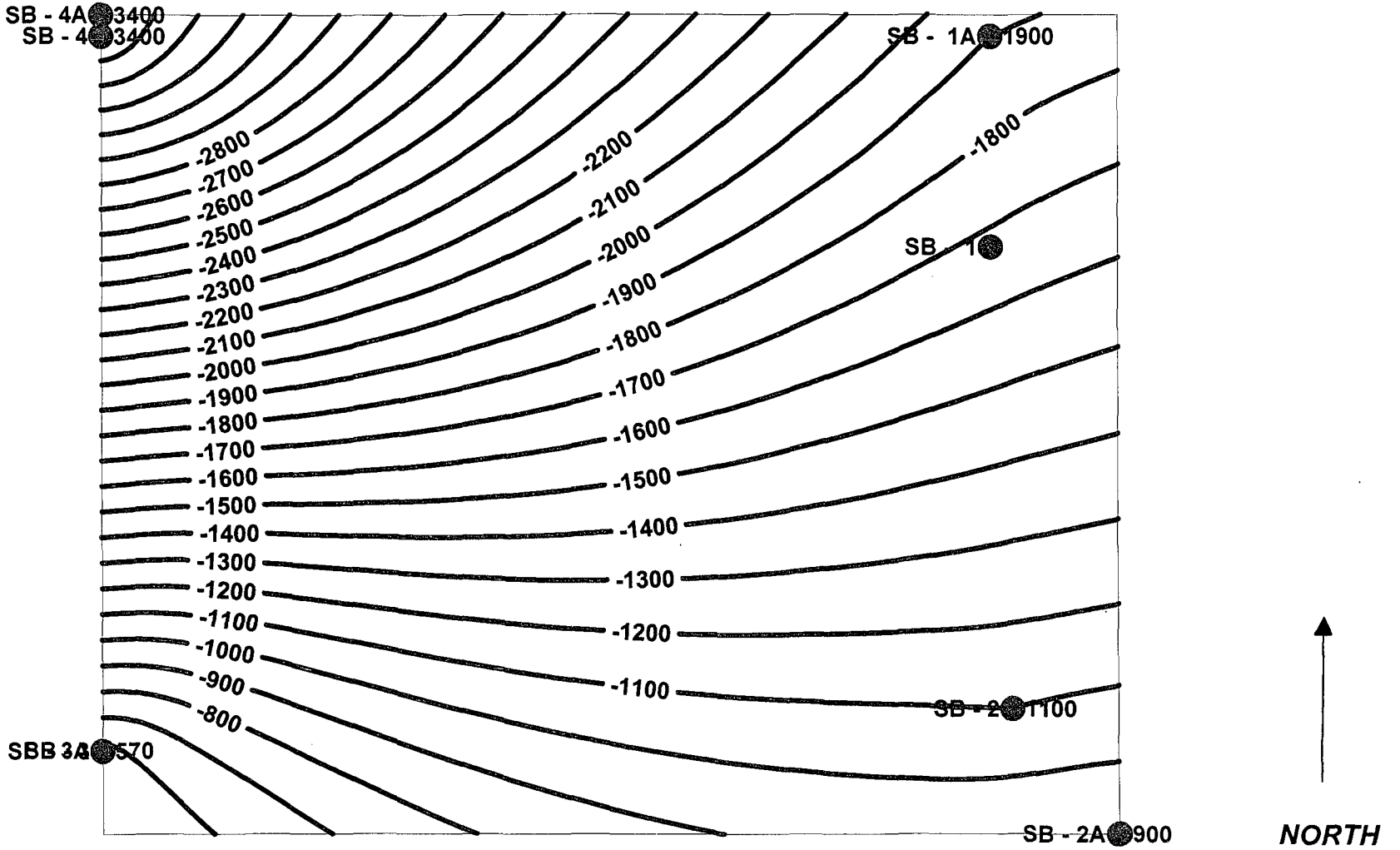
Contour Map of Soil Chloride Concentrations 9'-11' feet below ground surface
Contour Interval 200 PPM Chloride, red numbers to right of soil borings are chloride concentration in PPM
Soil Boring Locations are labeled and indicated by blue symbol. SB-3 and SB-3A are same location.

NMSWDCO Chloride Concentrations 9'-11' feet BGS
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



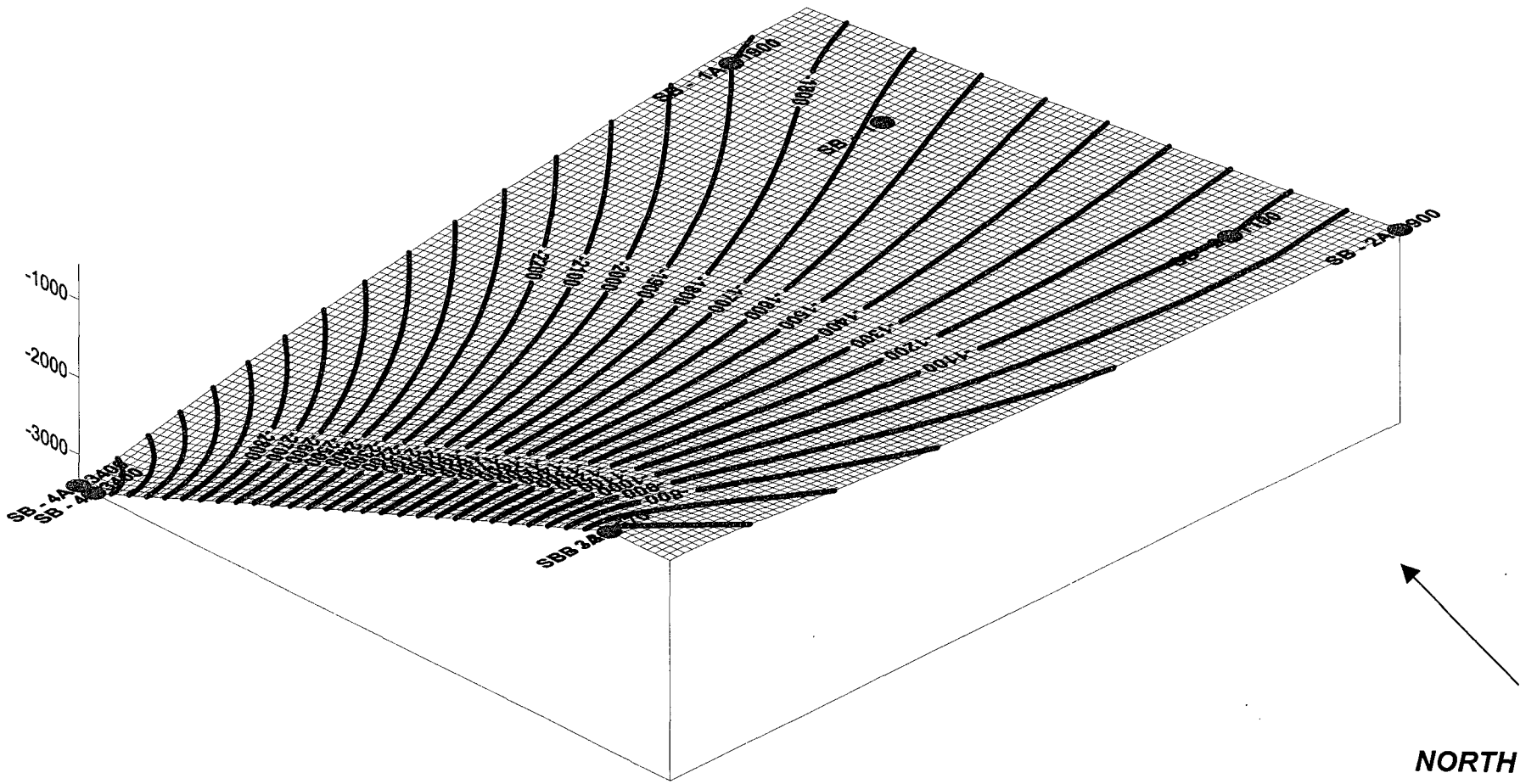
Contour Map of Soil Chloride Concentrations 9'-11' feet below ground surface
Contour Interval 200 PPM Chloride, red numbers to right of soil borings are chloride concentration in PPM
Soil Boring Locations are labeled and indicated by blue symbol. SB-3 and SB-3A are same location.

NMSWDCO Chloride Concentrations 14'-16' feet BGS
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



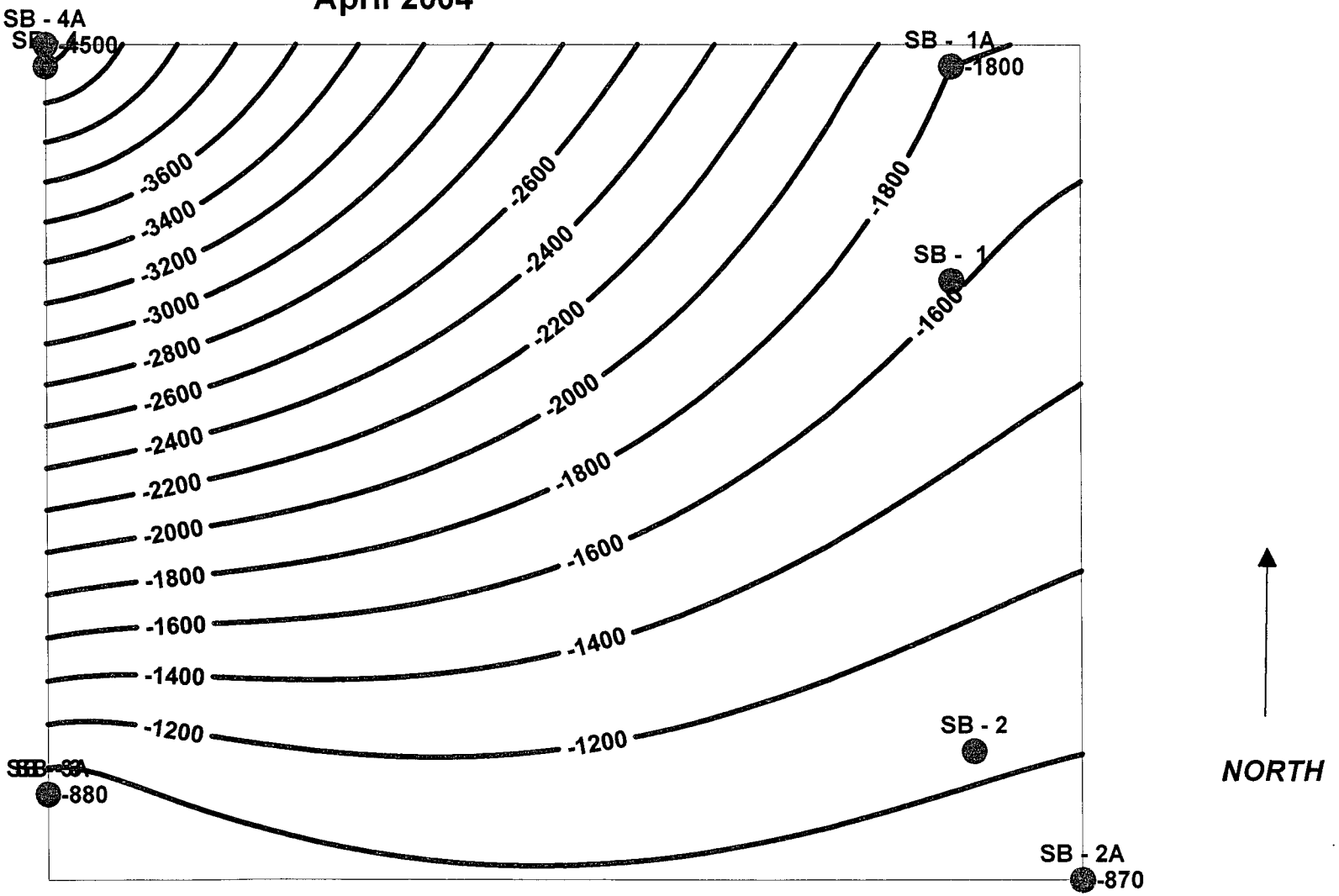
Contour Map of Soil Chloride Concentrations 14'-16' feet below ground surface
Contour Interval 100 PPM Chloride, red numbers to right of soil borings are chloride concentration in PPM
Soil Boring Locations are labeled and indicated by blue symbol. SB-3 and SB-3A are same location.

NMSWDCO 3-D View Chloride Concentrations 14'-16' feet BGS
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



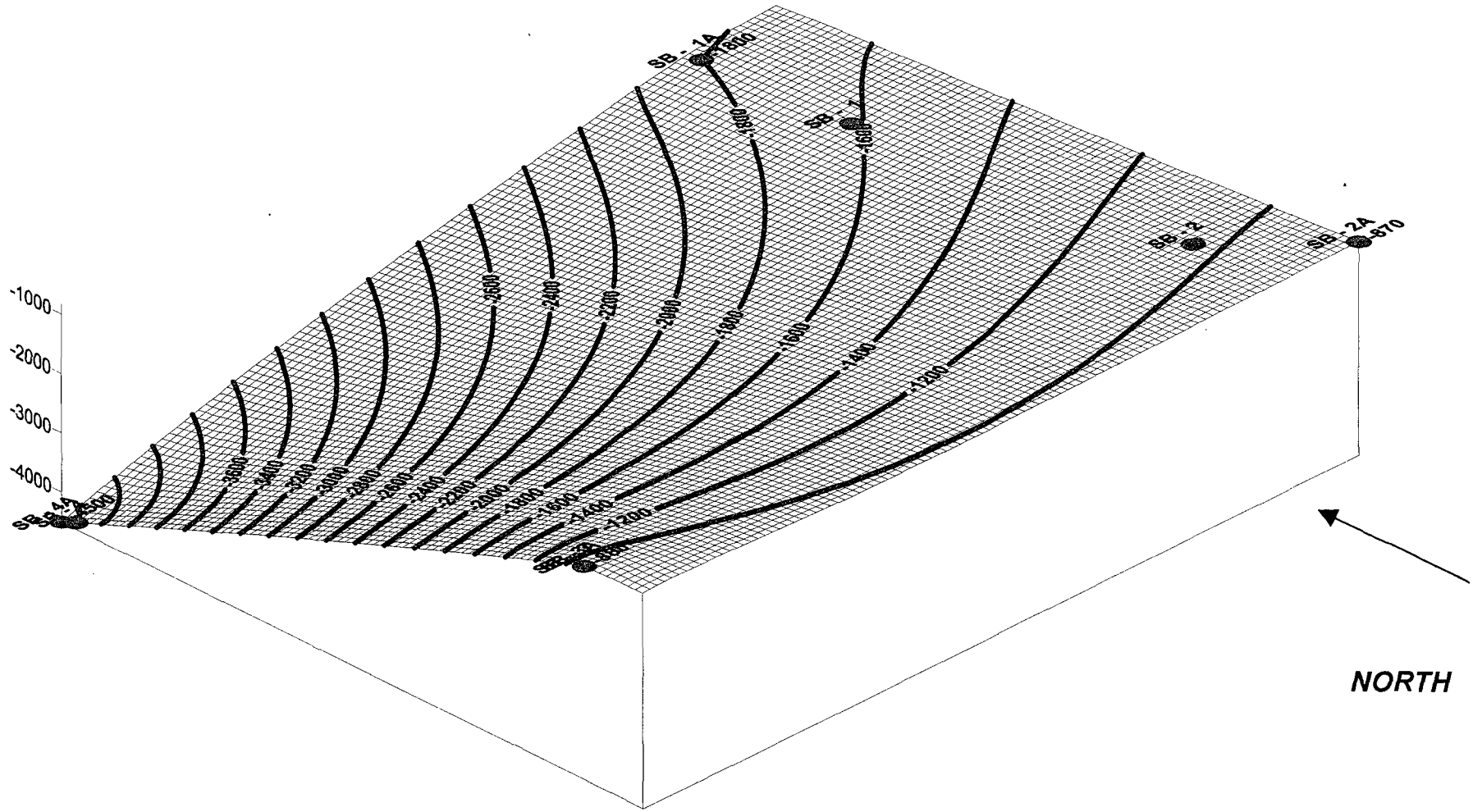
Contour Map of Soil Chloride Concentrations 14'-16' feet below ground surface
Contour Interval 100 PPM Chloride, red numbers to right of soil borings are chloride concentration in PPM
Soil Boring Locations are labeled and indicated by blue symbol. SB-3 and SB-3A are same location.

NMSWDCO Chloride Concentrations 19'-21' feet BGS
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



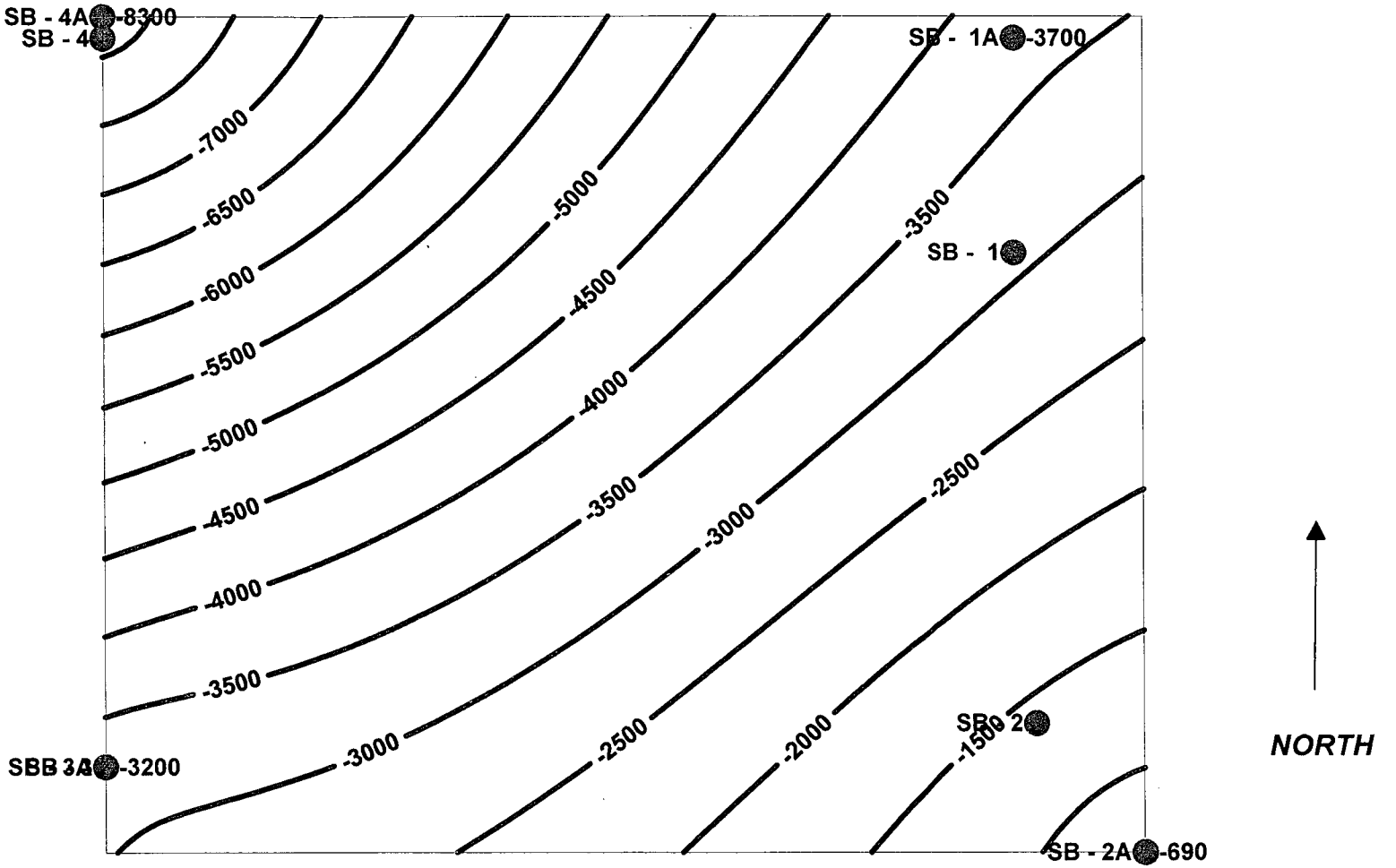
Contour Map of Soil Chloride Concentrations 19'-21' feet below ground surface
Contour Interval 200 PPM Chloride, red numbers to right of soil borings are chloride concentration in PPM
Soil Boring Locations are labeled and indicated by blue symbol. SB-3 and SB-3A are same location.

NMSWDCO 3-D View Chloride Concentrations 19'-21' feet BGS
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



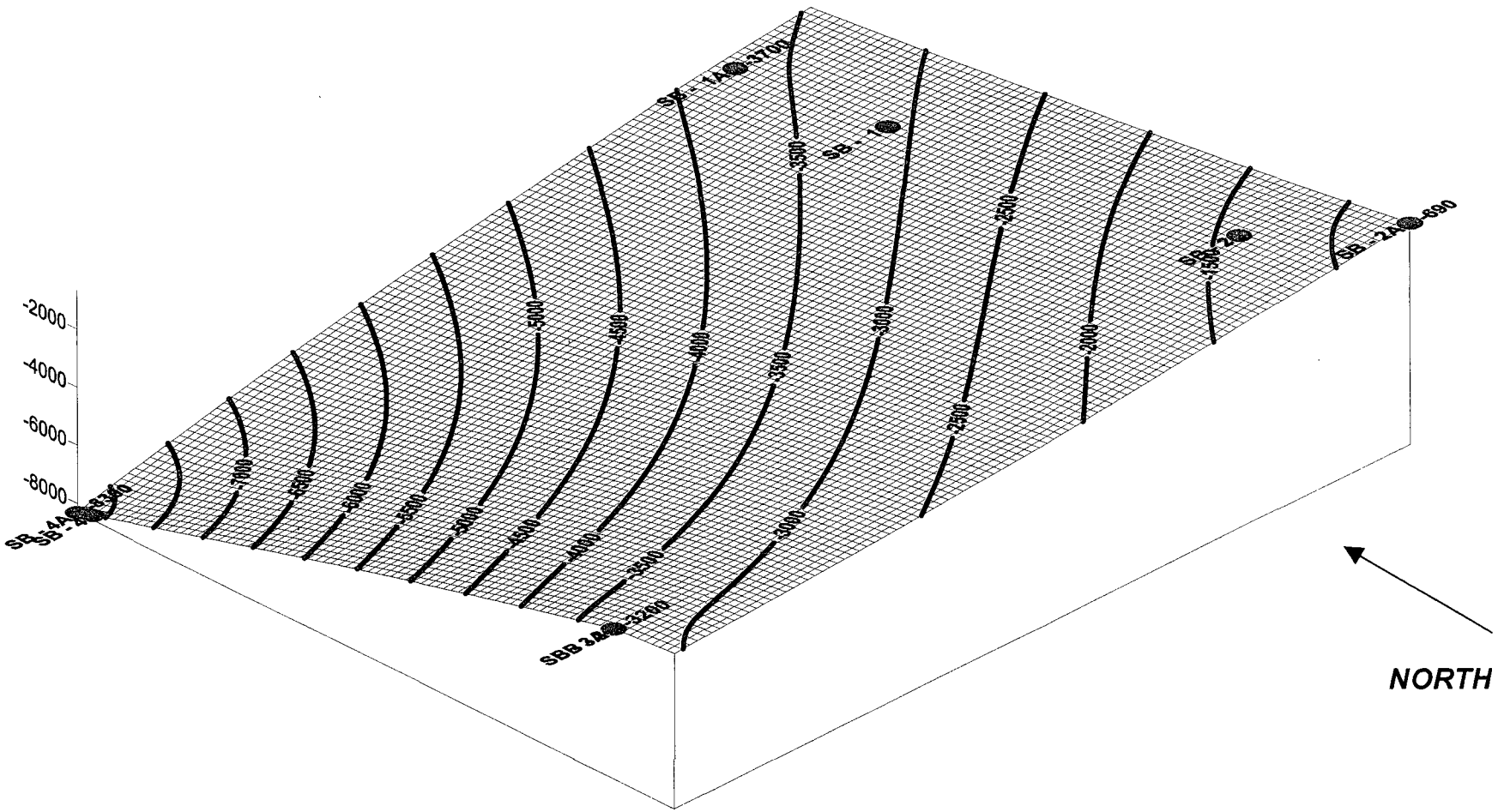
Contour Map of Soil Chloride Concentrations 19'-21' feet below ground surface
Contour Interval 200 PPM Chloride, red numbers to right of soil borings are chloride concentration in PPM
Soil Boring Locations are labeled and indicated by blue symbol. SB-3 and SB-3A are same location.

NMSWDCO Contour Map of Chloride at 24'-26' Depth
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



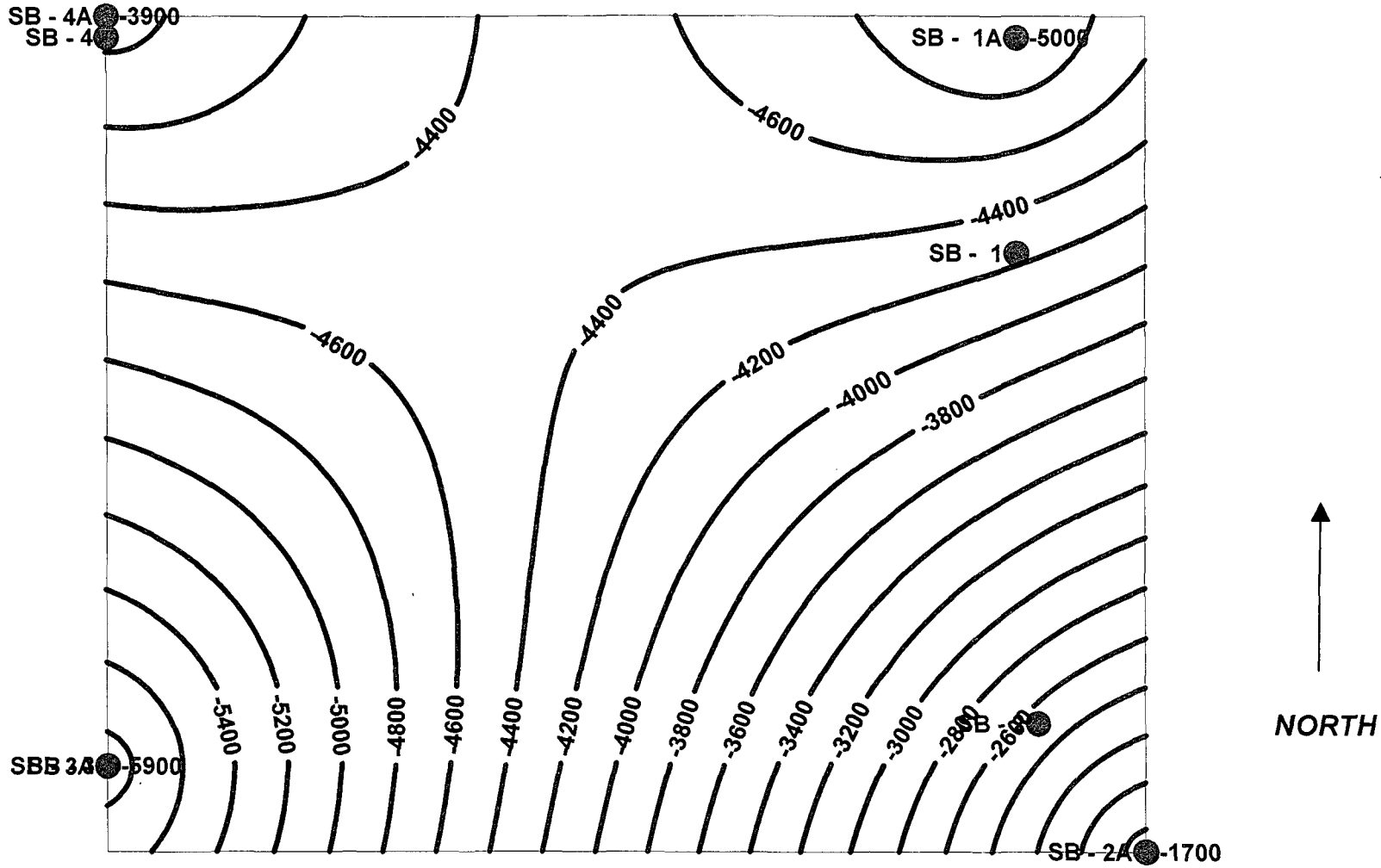
Contour Map of Soil Chloride Concentrations 24'-26' feet below ground surface
Contour Interval 500 PPM Chloride, red values to the right of soil boring are chloride values in PPM
Soil Boring Locations are labeled and indicated by blue symbol, Soil Boring 3 and 3A are same location

NMSWDCO 3-D Contour Map of Chloride at 24'-26' Depth
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



Contour Map of Soil Chloride Concentrations 24'-26' feet below ground surface
Contour Interval 500 PPM Chloride, red values to the right of soil boring are chloride values in PPM
Soil Boring Locations are labeled and indicated by blue symbol, Soil Boring 3 and 3A are same location

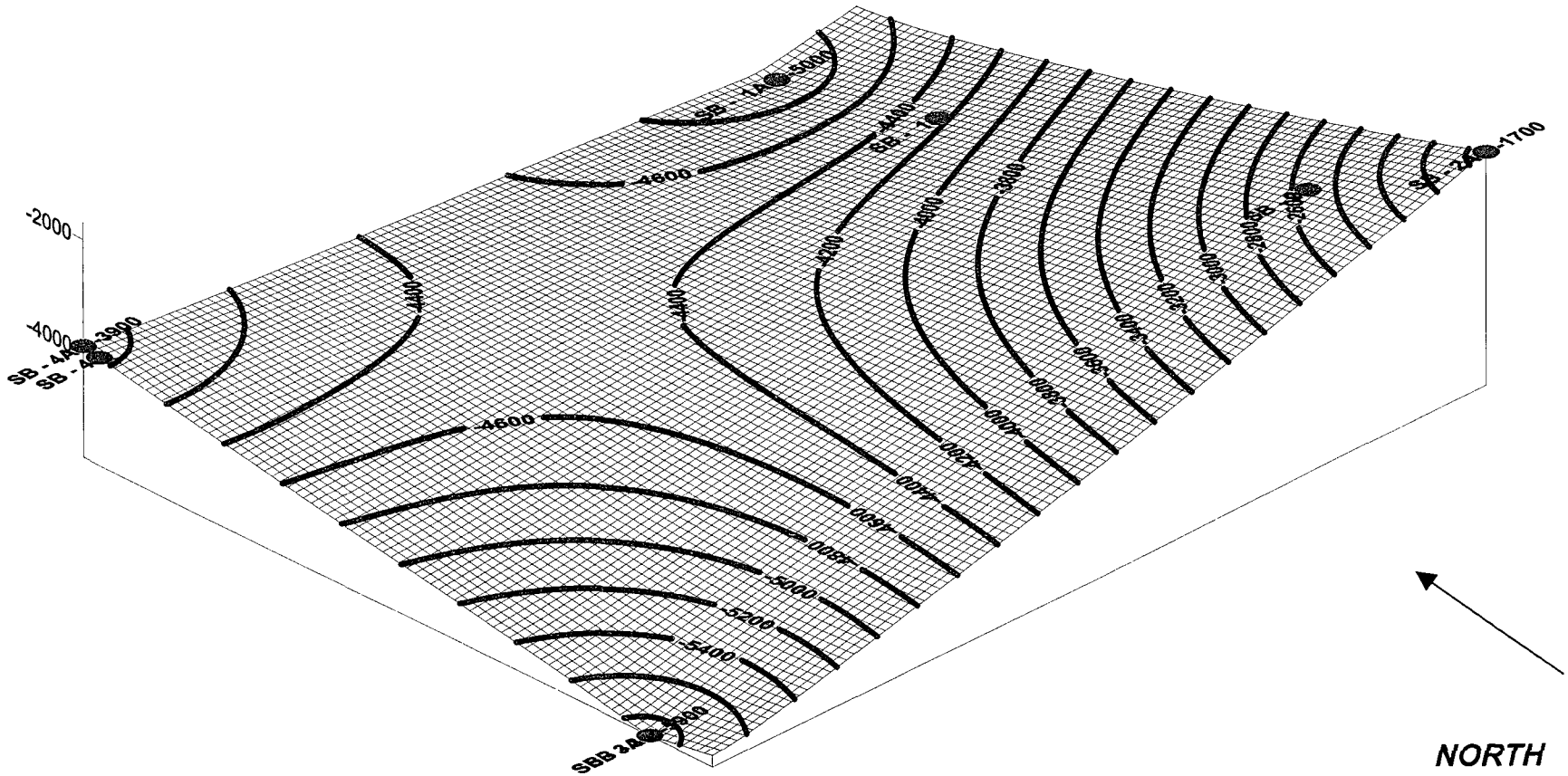
NMSWDCO Contour Map of Chloride at 29'-31' Depth
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



Contour Map of Soil Chloride Concentrations 29'-31' feet below ground surface
Contour Interval 200 PPM Chloride, red values to the right of soil boring are chloride values in PPM
Soil Boring Locations are labeled and indicated by blue symbol, Soil Boring 3 and 3A are same location

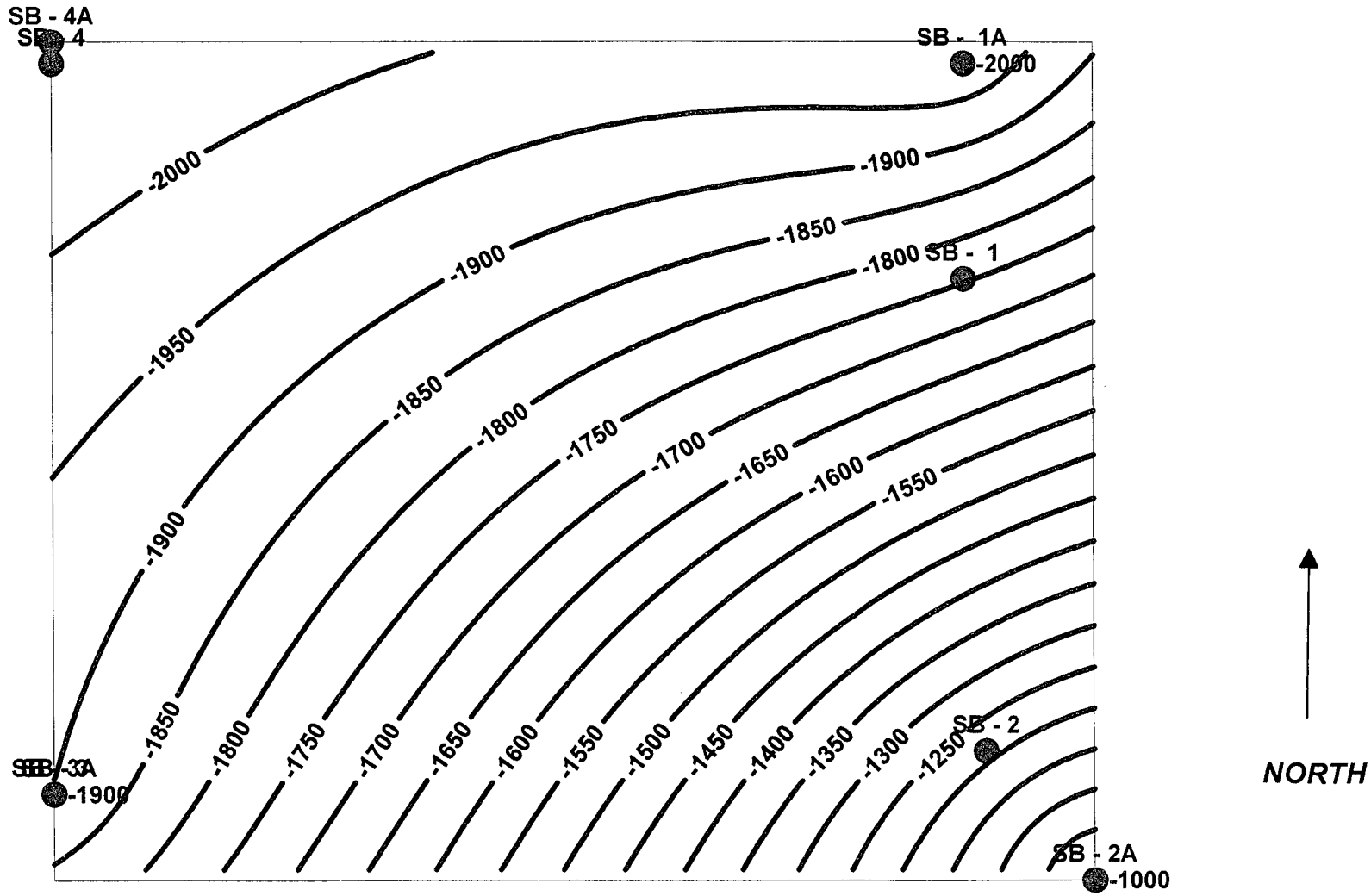
NMSWDCO 3-D Contour Map of Chloride at 29'-31' Depth
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004

**** This chloride concentration map, on top of the clay zone at 29'-31', shows a decrease in chloride concentration, at this top of the clay, in soil boring 4-A which had the perched water zone. The chloride concentration in soil boring 4-A at 24'-26' had a increase in chloride concentration due to the effect of the capillary fringe of the perched water. Soil borings 3A and 1A had similar chloride concentrations on top of the clay zone at 29'-31'. Soil boring 2A has a decrease in chloride concentration. These values reflect the indurated surface of the clay with a low spot at soil boring 4-A., show the impermeable nature of the clay zone, with similar high concentrations of chloride at top of the clay in soil borings SB-3A & 1A.****



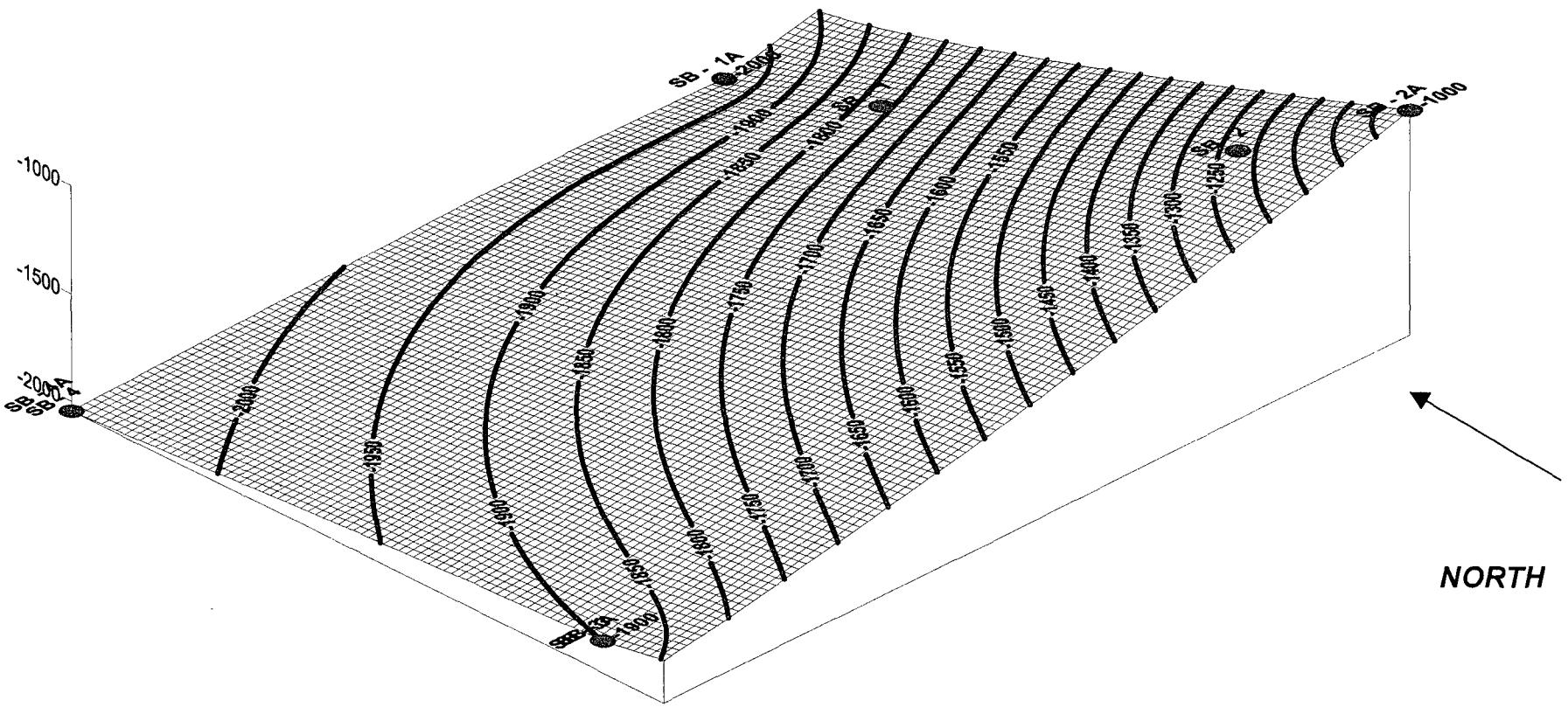
Contour Map of Soil Chloride Concentrations 29'-31' feet below ground surface
Contour Interval 200 PPM Chloride, red values to the right of soil boring are chloride values in PPM
Soil Boring Locations are labeled and indicated by blue symbol, Soil Boring 3 and 3A are same location

NMSWDCO Contour Map of Chloride at 34'-36' Depth
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



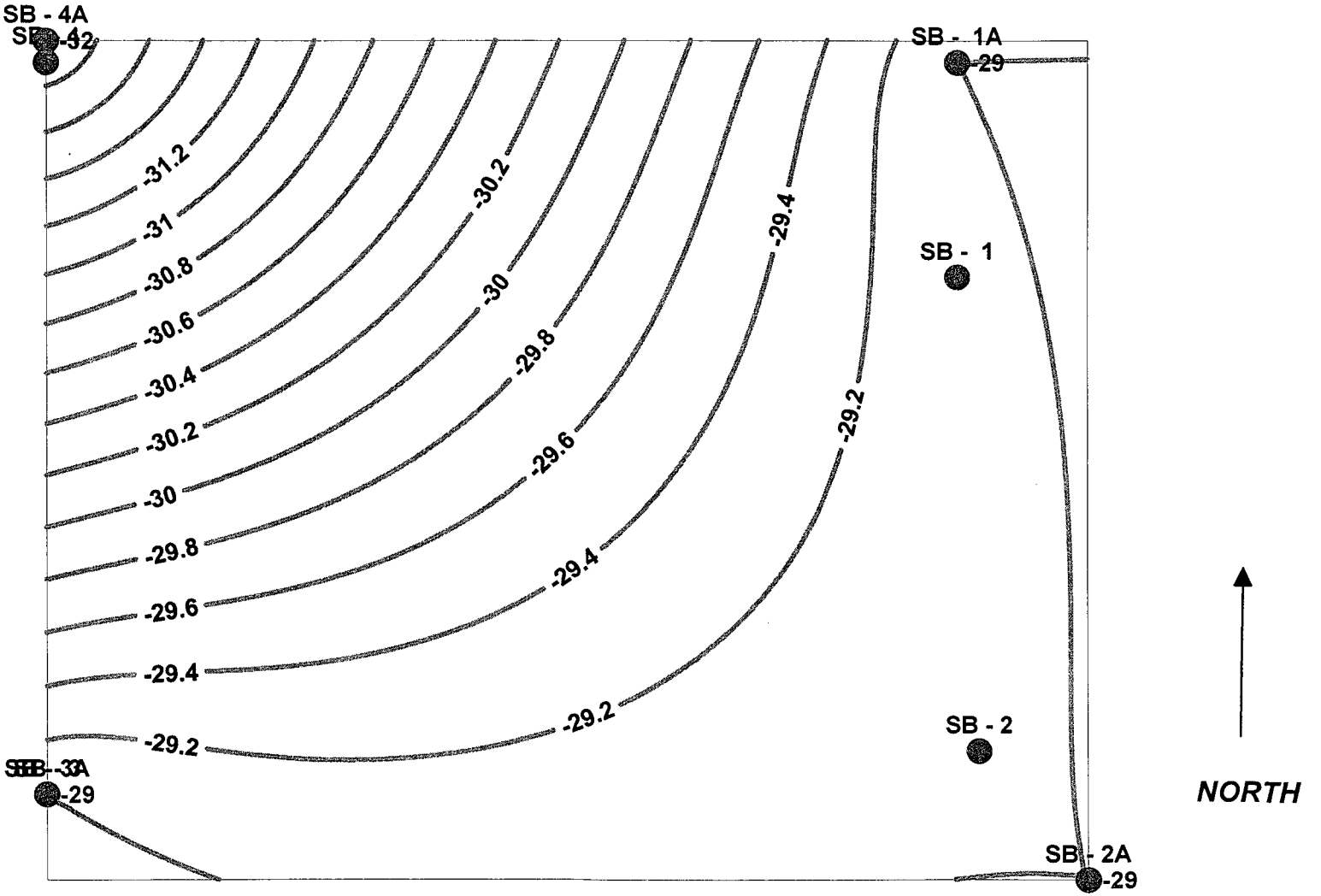
Contour Map of Soil Chloride Concentrations 34'-36' feet below ground surface
Contour Interval 50 PPM Chloride, red values to the right of soil boring are chloride values in PPM
Soil Boring Locations are labeled and indicated by blue symbol, Soil Boring 3 and 3A are same location

NMSWDCO 3-D View Contour Map of Chloride at 34'-36' Depth
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



Contour Map of Soil Chloride Concentrations 34'-36' feet below ground surface
Contour Interval 50 PPM Chloride, red values to the right of soil boring are chloride values in PPM
Soil Boring Locations are labeled and indicated by blue symbol, Soil Boring 3 and 3A are same location

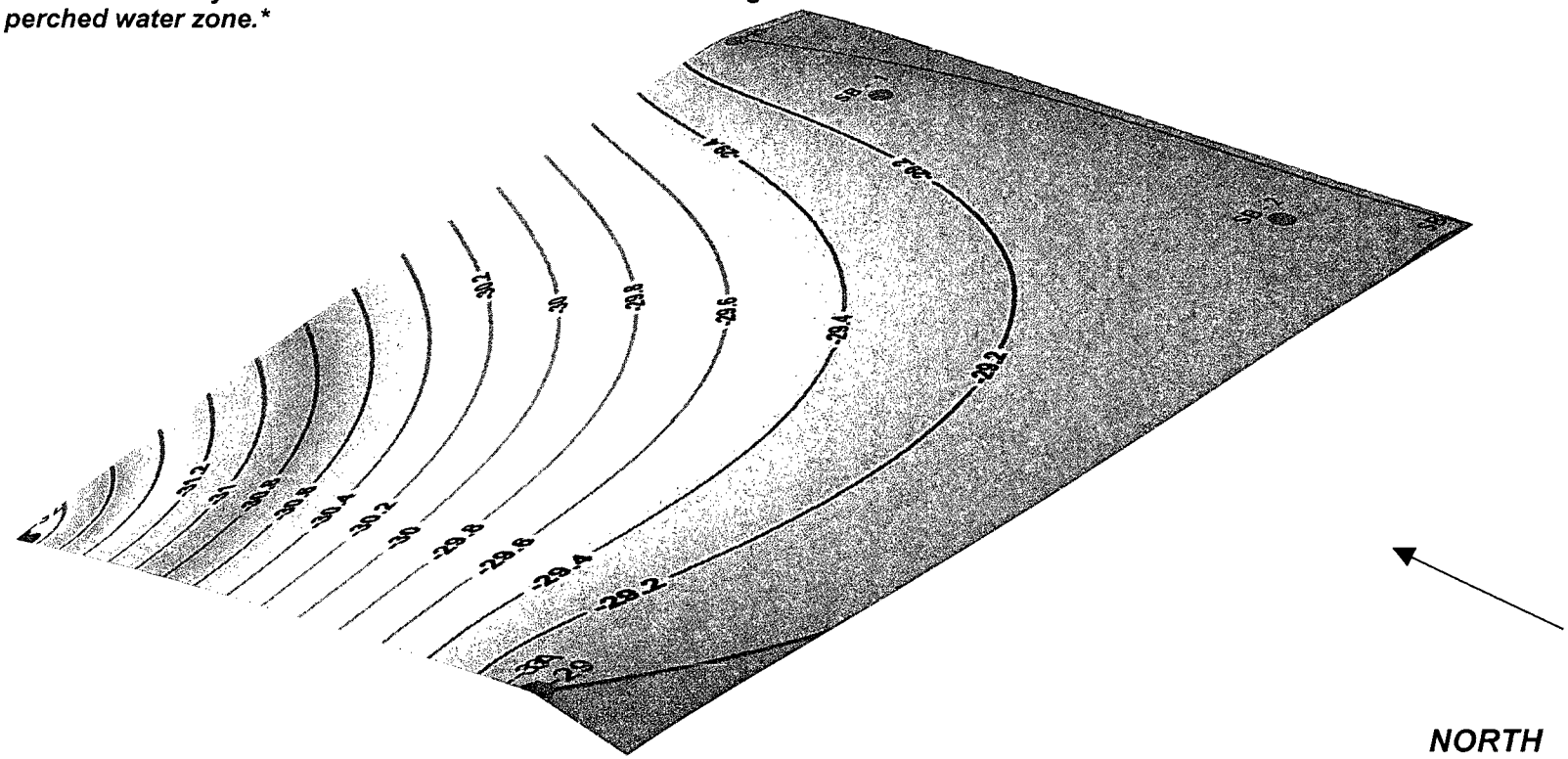
NMSWDCO Contour Map Top of Clay at 34'-36' Depth
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004



Contour Map Top of Clay @ 34'-36" feet below ground surface, ground surface is unsurveyed ASL.
Contour Interval 0.20 feet, red values to the right of soil boring are depth to clay values in soil boring.
Soil Boring Locations are labeled and indicated by blue symbol, Soil Boring 3 and 3A are same location

NMSWDCO 3-D Surface / Contour Map Top of Clay at 34'-36' Depth
Section 21 T.10S. R. 34 E., Lea County, NM
By: C.M. Barnhilll, PG
April 2004

** 3-D surface map shows low area in clay zone beneath soil boring 4A. This depression in the clay zone surface is the reason that soil boring 4A had a perched water zone.**



Contour Map Top of Clay @ 34'-36" feet below ground surface, ground surface is unsurveyed ASL.
Contour Interval 0.20 feet, red values to the right of soil boring are depth to clay values in soil boring.
Soil Boring Locations are labeled and indicated by blue symbol, Soil Boring 3 and 3A are same location

Hall Environmental
Analysis Laboratory

COVER LETTER

October 27, 2003

John C. Maxey, Jr.
New Mexico Salt Water Disposal Co., Inc.
P.O. Box 1518
Roswell, NM 882021518
TEL: (505) 622-3770
FAX (505) 622-8643

RE: NMSWDCo Site Assessment Order No.: 0310133

Dear John C. Maxey, Jr.:

Hall Environmental Analysis Laboratory received 10 samples on 10/17/2003 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT:	New Mexico Salt Water Disposal Co., Inc.	**Client Sample ID:**	SB-1:9'-11'
Lab Order:	0310133	**Collection Date:**	10/14/2003 10:00:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0310133-01	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BL
Chloride	1800	15		mg/Kg	50	10/23/2003 4:17:54 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/21/2003 11:06:28 PM
Toluene	ND	0.025		mg/Kg	1	10/21/2003 11:06:28 PM
Ethylbenzene	ND	0.025		mg/Kg	1	10/21/2003 11:06:28 PM
Xylenes, Total	ND	0.025		mg/Kg	1	10/21/2003 11:06:28 PM
Surr: 4-Bromofluorobenzene	104	74-118		%REC	1	10/21/2003 11:06:28 PM

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: New Mexico Salt Water Disposal Co., Inc.
Client Sample ID: SB-2:0'-2'
Lab Order: 0310133
Collection Date: 10/14/2003 10:15:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0310133-02
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BL
Chloride	330	1.5		mg/Kg	5	10/23/2003 4:34:42 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	170	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/21/2003 11:37:10 PM
Toluene	ND	0.025		mg/Kg	1	10/21/2003 11:37:10 PM
Ethylbenzene	ND	0.025		mg/Kg	1	10/21/2003 11:37:10 PM
Xylenes, Total	ND	0.025		mg/Kg	1	10/21/2003 11:37:10 PM
Surr: 4-Bromofluorobenzene	98.0	74-118		%REC	1	10/21/2003 11:37:10 PM

Qualifiers:
- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: New Mexico Salt Water Disposal Co., Inc.
Client Sample ID: SB-2:4'-6'
Lab Order: 0310133
Collection Date: 10/14/2003 10:30:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0310133-03
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BL
Chloride	580	3.0		mg/Kg	10	10/23/2003 4:51:26 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/22/2003 12:07:48 AM
Toluene	ND	0.025		mg/Kg	1	10/22/2003 12:07:48 AM
Ethylbenzene	ND	0.025		mg/Kg	1	10/22/2003 12:07:48 AM
Xylenes, Total	ND	0.025		mg/Kg	1	10/22/2003 12:07:48 AM
Surr: 4-Bromofluorobenzene	106	74-118		%REC	1	10/22/2003 12:07:48 AM

Qualifiers:
- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: New Mexico Salt Water Disposal Co., Inc.
Client Sample ID: SB-2:9'-11'
Lab Order: 0310133
Collection Date: 10/14/2003 10:45:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0310133-04
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BL
Chloride	500	3.0		mg/Kg	10	10/23/2003 5:08:10 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/22/2003 12:38:27 AM
Toluene	ND	0.025		mg/Kg	1	10/22/2003 12:38:27 AM
Ethylbenzene	ND	0.025		mg/Kg	1	10/22/2003 12:38:27 AM
Xylenes, Total	ND	0.025		mg/Kg	1	10/22/2003 12:38:27 AM
Surr: 4-Bromofluorobenzene	97.3	74-118		%REC	1	10/22/2003 12:38:27 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: New Mexico Salt Water Disposal Co., Inc.
Client Sample ID: SB-2:14'-16'
Lab Order: 0310133
Collection Date: 10/14/2003 12:40:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0310133-05
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BL
Chloride	1100	6.0		mg/Kg	20	10/23/2003 5:24:54 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/22/2003 2:32:05 PM
Toluene	ND	0.025		mg/Kg	1	10/22/2003 2:32:05 PM
Ethylbenzene	ND	0.025		mg/Kg	1	10/22/2003 2:32:05 PM
Xylenes, Total	ND	0.025		mg/Kg	1	10/22/2003 2:32:05 PM
Surr: 4-Bromofluorobenzene	98.9	74-118		%REC	1	10/22/2003 2:32:05 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT:	New Mexico Salt Water Disposal Co., Inc.	**Client Sample ID:**	SB-3:9'-11'
Lab Order:	0310133	**Collection Date:**	10/14/2003 11:00:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0310133-06	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BL
Chloride	3600	15		mg/Kg	50	10/23/2003 5:41:38 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/22/2003 3:02:58 PM
Toluene	ND	0.025		mg/Kg	1	10/22/2003 3:02:58 PM
Ethylbenzene	ND	0.025		mg/Kg	1	10/22/2003 3:02:58 PM
Xylenes, Total	ND	0.025		mg/Kg	1	10/22/2003 3:02:58 PM
Surr: 4-Bromofluorobenzene	96.3	74-118		%REC	1	10/22/2003 3:02:58 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: New Mexico Salt Water Disposal Co., Inc.
Client Sample ID: SB-4:0'-2'
Lab Order: 0310133
Collection Date: 10/14/2003 11:30:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0310133-07
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BL
Chloride	1600	15		mg/Kg	50	10/23/2003 5:58:22 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/22/2003 3:33:55 PM
Toluene	ND	0.025		mg/Kg	1	10/22/2003 3:33:55 PM
Ethylbenzene	ND	0.025		mg/Kg	1	10/22/2003 3:33:55 PM
Xylenes, Total	ND	0.025		mg/Kg	1	10/22/2003 3:33:55 PM
Surr: 4-Bromofluorobenzene	95.6	74-118		%REC	1	10/22/2003 3:33:55 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: New Mexico Salt Water Disposal Co., Inc.
Client Sample ID: SB-4:4'-6'
Lab Order: 0310133
Collection Date: 10/14/2003 11:40:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0310133-08
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						*Analyst: BDH*
Chloride	88	0.30		mg/Kg	1	10/24/2003 4:43:35 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/22/2003 4:04:45 PM
Toluene	ND	0.025		mg/Kg	1	10/22/2003 4:04:45 PM
Ethylbenzene	ND	0.025		mg/Kg	1	10/22/2003 4:04:45 PM
Xylenes, Total	ND	0.025		mg/Kg	1	10/22/2003 4:04:45 PM
Surr: 4-Bromofluorobenzene	98.3	74-118		%REC	1	10/22/2003 4:04:45 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: New Mexico Salt Water Disposal Co., Inc.
Client Sample ID: SB-4:9'-11'
Lab Order: 0310133
Collection Date: 10/14/2003 11:50:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0310133-09
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	2200	15		mg/Kg	50	10/24/2003 5:00:19 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/22/2003 4:35:32 PM
Toluene	ND	0.025		mg/Kg	1	10/22/2003 4:35:32 PM
Ethylbenzene	ND	0.025		mg/Kg	1	10/22/2003 4:35:32 PM
Xylenes, Total	ND	0.025		mg/Kg	1	10/22/2003 4:35:32 PM
Surr: 4-Bromofluorobenzene	97.7	74-118		%REC	1	10/22/2003 4:35:32 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT:	New Mexico Salt Water Disposal Co., Inc.	**Client Sample ID:**	SB-4:14'-16'
Lab Order:	0310133	**Collection Date:**	10/14/2003 12:22:00 PM
Project:	NMSWDCo Site Assessment		
Lab ID:	0310133-10	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	3400	15		mg/Kg	50	10/24/2003 5:17:03 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/21/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	10/22/2003 5:06:32 PM
Toluene	ND	0.025		mg/Kg	1	10/22/2003 5:06:32 PM
Ethylbenzene	ND	0.025		mg/Kg	1	10/22/2003 5:06:32 PM
Xylenes, Total	ND	0.025		mg/Kg	1	10/22/2003 5:06:32 PM
Surr: 4-Bromofluorobenzene	98.4	74-118		%REC	1	10/22/2003 5:06:32 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: Read & Stevens, Inc.
Work Order: 0310133
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Method Blank

Sample ID MB-4511	Batch ID: 4511	Test Code: E418.1		Units: mg/Kg		Analysis Date 10/21/2003			Prep Date 10/20/2003		
Client ID:		Run ID: BUCK IR_031021A				SeqNo: 221550					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20									

Sample ID MB-4506	Batch ID: 4506	Test Code: SW8021		Units: mg/Kg		Analysis Date 10/22/2003 1:09:02 AM			Prep Date 10/20/2003		
Client ID:		Run ID: PIDFID_031021A				SeqNo: 221785					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.025									
Toluene	ND	0.025									
Ethylbenzene	ND	0.025									
Xylenes, Total	ND	0.025									
Surr: 4-Bromofluorobenzene	0.9748	0	1	0	97.5	74	118	0			

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

J

Hall Environmental Analysis Laboratory

Date: *27-Oct-03*

CLIENT: Read & Stevens, Inc.
Work Order: 0310133
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID 0310133-10AMS	Batch ID: 4511	Test Code: E418.1	Units: mg/Kg	Analysis Date 10/21/2003	Prep Date 10/20/2003
Client ID: SB-4:14'-16'		Run ID: BUCK IR_031021A		SeqNo: 221568	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	111	20	103	0	108	82	114	0			

Sample ID 0310133-10AMSD	Batch ID: 4511	Test Code: E418.1	Units: mg/Kg	Analysis Date 10/21/2003	Prep Date 10/20/2003
Client ID: SB-4:14'-16'		Run ID: BUCK IR_031021A		SeqNo: 221569	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	107	20	103	0	104	82	114	111	3.67	20	

Sample ID 0310133-04aMS	Batch ID: 4506	Test Code: SW8021	Units: mg/Kg	Analysis Date 10/22/2003 1:39:40 AM	Prep Date
Client ID: SB-2:9'-11'		Run ID: PIDFID_031021A		SeqNo: 221791	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.021	0.025	1	0	102	77	122	0			
Toluene	1.028	0.025	1	0	103	81	115	0			
Ethylbenzene	1.006	0.025	1	0	101	84	117	0			
Xylenes, Total	3.067	0.025	3	0	102	84	116	0			

Sample ID 0310133-04aMSD	Batch ID: 4506	Test Code: SW8021	Units: mg/Kg	Analysis Date 10/22/2003 2:10:19 AM	Prep Date
Client ID: SB-2:9'-11'		Run ID: PIDFID_031021A		SeqNo: 221792	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.065	0.025	1	0	107	77	122	1.021	4.31	27	
Toluene	1.054	0.025	1	0	105	81	115	1.028	2.53	19	
Ethylbenzene	1.009	0.025	1	0	101	84	117	1.006	0.242	10	
Xylenes, Total	3.136	0.025	3	0	105	84	116	3.067	2.23	13	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

1

CLIENT: Read & Stevens, Inc.
Work Order: 0310133
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID 0310133-05aMS Batch ID: 4506 Test Code: SW8021 Units: mg/Kg Analysis Date 10/22/2003 5:37:49 PM Prep Date
Client ID: SB-2:14'-16' Run ID: PIDFID_031022A SeqNo: 222036

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.113	0.025	1	0	111	77	122	0			
Toluene	1.121	0.025	1	0	112	81	115	0			
Ethylbenzene	1.068	0.025	1	0	107	84	117	0			
Xylenes, Total	3.303	0.025	3	0	110	84	116	0			

Sample ID 0310133-05aMSD Batch ID: 4506 Test Code: SW8021 Units: mg/Kg Analysis Date 10/22/2003 6:08:53 PM Prep Date
Client ID: SB-2:14'-16' Run ID: PIDFID_031022A SeqNo: 222037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.08	0.025	1	0	108	77	122	1.113	3.03	27	
Toluene	1.076	0.025	1	0	108	81	115	1.121	4.11	19	
Ethylbenzene	1.015	0.025	1	0	101	84	117	1.068	5.12	10	
Xylenes, Total	3.18	0.025	3	0	106	84	116	3.303	3.80	13	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 27-Oct-03

CLIENT: Read & Stevens, Inc.
Work Order: 0310133
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS-4511 Batch ID: 4511 Test Code: E418.1 Units: mg/Kg Analysis Date 10/21/2003 Prep Date 10/20/2003
Client ID: Run ID: BUCK IR_031021A SeqNo: 221551

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	108	20	103	0	105	82	114	0			

Sample ID BTEX Std 100ng Batch ID: 4506 Test Code: SW8021 Units: mg/Kg Analysis Date 10/21/2003 8:31:44 PM Prep Date
Client ID: Run ID: PIDFID_031021A SeqNo: 221793

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.064	0.025	1	0	106	77	122	0			
Toluene	1.077	0.025	1	0	108	81	115	0			
Ethylbenzene	0.9691	0.025	1	0	96.9	84	117	0			
Xylenes, Total	3.108	0.025	3	0	104	84	116	0			

Sample ID BTEX Std 100ng Batch ID: 4506 Test Code: SW8021 Units: mg/Kg Analysis Date 10/22/2003 2:41:19 AM Prep Date
Client ID: Run ID: PIDFID_031021A SeqNo: 221794

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.056	0.025	1	0	106	77	122	1.064	0.678	27	
Toluene	1.078	0.025	1	0	108	81	115	1.077	0.0520	19	
Ethylbenzene	0.9721	0.025	1	0	97.2	84	117	0.9691	0.310	10	
Xylenes, Total	3.129	0.025	3	0	104	84	116	3.108	0.672	13	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

CLIENT: Read & Stevens, Inc.
Work Order: 0310133
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID BTEX Std 100ng Batch ID: 4506 Test Code: SW8021 Units: mg/Kg Analysis Date 10/22/2003 6:39:38 PM Prep Date
Client ID: Run ID: PIDFID_031022A SeqNo: 222130

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.061	0.025	1	0	106	77	122	0			
Toluene	1.117	0.025	1	0	112	81	115	0			
Ethylbenzene	1.008	0.025	1	0	101	84	117	0			
Xylenes, Total	3.249	0.025	3	0	108	84	116	0			

Sample ID BTEX Std 100ng Batch ID: 4506 Test Code: SW8021 Units: mg/Kg Analysis Date 10/23/2003 2:52:19 AM Prep Date
Client ID: Run ID: PIDFID_031022A SeqNo: 222131

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.093	0.025	1	0	109	77	122	1.061	2.99	27	
Toluene	1.117	0.025	1	0	112	81	115	1.117	0.000895	19	
Ethylbenzene	1.008	0.025	1	0	101	84	117	1.008	0.0704	10	
Xylenes, Total	3.158	0.025	3	0	105	84	116	3.249	2.82	13	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name CMB | Date and Time Received: 10/17/2003

Work Order Number 0310133 | Received by AMG

Checklist completed by A Gonzales 10/17/03
Signature | Date

Matrix | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	2°	4° C ± 2 *Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: New Mexico Salt Water Disposal Company, Inc.
Address: ATTN: John Maxey, Jr. PO Box 1518 Roswell, New Mexico 88202
505 - 622-3770
Phone #: 505-625-0266
Fax #: 505-622-8643

Project Name: NMSWDCo Site Assessment
Project #: MSA NMSWDCo NW¼ NW¼ Sec. 21 T.10S. R.34E. Lea Co, NM
Project Manager: John C. Maxey, Jr.
Sampler: Cm Barnhill, PE
Sample Temperature: 2.2

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative H_2Cl_2	Preservative HNO_3	Preservative None	HEAL No. 0310133
10/14/03	10:00	Soil	SB-1: 9'-11'	2x4oz 6/Jars			X	1
10/14/03	10:15	Soil	SB-2: 0'-2'	" "			X	2
10/14/03	10:30	Soil	SB-2: 4'-6'	" "			X	3
10/14/03	10:45	Soil	SB-2: 9'-11'	" "			X	4
10/14/03	12:40	Soil	SB-2: 14'-16'	" "			X	5
10/14/03	11:00	Soil	SB-3: 9'-11'	" "			X	6
10/14/03	11:30	Soil	SB-4: 0'-2'	" "			X	7
10/14/03	11:40	Soil	SB-4: 4'-6'	" "			X	8
10/14/03	11:50	Soil	SB-4: 9'-11'	" "			X	9
10/14/03	12:22	Soil	SB-4: 14'-16'	" "			X	10

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B MOD (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260 (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
X			X						X								
X			X						X								
X			X						X								
X			X						X								
X			X						X								
X			X						X								
X			X						X								
X			X						X								
X			X						X								
X			X						X								

Date: 10/17/03 Time: 0820 Relinquished By: (Signature)
Date: Time: Relinquished By: (Signature)
Remarks: CBarnhill 10/17/03 1723

Remarks: Bill NMSWDCo Directly for analysis costs: Please Send Copy of Results to: Cmbenviroe dfn.com

Hall Environmental Analysis Laboratory

COVER LETTER

December 26, 2003

John Maxey
New Mexico Salt Water Disposal Co.
P.O. Box 1518
Roswell, New Mexico 882021518
TEL: (505) 625-0266
FAX (505) 622-8643

RE: NMSWDCo Site Assessment Order No.: 0311174

Dear John Maxey:

Hall Environmental Analysis Laboratory received 30 samples on 11/21/2003 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-1A: 0-2'
Lab Order: 0311174
Collection Date: 11/19/2003 9:00:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-01
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	120	3.0		mg/Kg	10	12/6/2003 12:34:12 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	32	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 11:00:47 AM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 11:00:47 AM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 11:00:47 AM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 11:00:47 AM
Surr: 4-Bromofluorobenzene	97.4	74-118		%REC	1	12/1/2003 11:00:47 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-1A: 9-11'
Lab Order: 0311174
Collection Date: 11/19/2003 10:37:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-02
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	380	3.0		mg/Kg	10	12/6/2003 12:50:57 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	280	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 11:31:02 AM
Toluene	0.028	0.025		mg/Kg	1	12/1/2003 11:31:02 AM
Ethylbenzene	0.083	0.025		mg/Kg	1	12/1/2003 11:31:02 AM
Xylenes, Total	0.19	0.025		mg/Kg	1	12/1/2003 11:31:02 AM
Surr: 4-Bromofluorobenzene	98.7	74-118		%REC	1	12/1/2003 11:31:02 AM

Qualifiers:
- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-1A: 14-16'
Lab Order: 0311174
Collection Date: 11/19/2003 11:05:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-03
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	1900	6.0		mg/Kg	20	12/7/2003 12:05:12 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	55	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 12:01:08 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 12:01:08 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 12:01:08 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 12:01:08 PM
Surr: 4-Bromofluorobenzene	99.9	74-118		%REC	1	12/1/2003 12:01:08 PM

Qualifiers:
- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-1A: 19-21'
Lab Order: 0311174
Collection Date: 11/19/2003 11:20:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-04
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	1800	6.0		mg/Kg	20	12/7/2003 12:21:57 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 12:31:11 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 12:31:11 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 12:31:11 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 12:31:11 PM
Surr: 4-Bromofluorobenzene	99.5	74-118		%REC	1	12/1/2003 12:31:11 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-1A: 24-26'
Lab Order:	0311174	**Collection Date:**	11/19/2003 11:36:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-05	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	3700	15		mg/Kg	50	12/7/2003 12:38:42 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 1:01:16 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 1:01:16 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 1:01:16 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 1:01:16 PM
Surr: 4-Bromofluorobenzene	98.7	74-118		%REC	1	12/1/2003 1:01:16 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-1A: 29-31'
Lab Order:	0311174	**Collection Date:**	11/19/2003 11:54:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-06	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	5000	30		mg/Kg	100	12/7/2003 1:12:12 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 1:31:30 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 1:31:30 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 1:31:30 PM
Xylenes, Total	0.036	0.025		mg/Kg	1	12/1/2003 1:31:30 PM
Surr: 4-Bromofluorobenzene	96.0	74-118		%REC	1	12/1/2003 1:31:30 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-1A: 34-36'
Lab Order: 0311174
Collection Date: 11/19/2003 12:40:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-07
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	2000	15		mg/Kg	50	12/7/2003 1:28:57 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/26/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 2:01:44 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 2:01:44 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 2:01:44 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 2:01:44 PM
Surr: 4-Bromofluorobenzene	101	74-118		%REC	1	12/1/2003 2:01:44 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-2A: 0-2'
Lab Order:	0311174	**Collection Date:**	11/19/2003 1:20:00 PM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-08	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	350	3.0		mg/Kg	10	12/6/2003 2:31:27 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 2:31:56 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 2:31:56 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 2:31:56 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 2:31:56 PM
Surr: 4-Bromofluorobenzene	99.3	74-118		%REC	1	12/1/2003 2:31:56 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-2A: 9-11'
Lab Order:	0311174	**Collection Date:**	11/19/2003 1:36:00 PM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-09	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	1400	6.0		mg/Kg	20	12/7/2003 1:45:42 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 3:02:07 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 3:02:07 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 3:02:07 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 3:02:07 PM
Surr: 4-Bromofluorobenzene	100	74-118		%REC	1	12/1/2003 3:02:07 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-2A: 14-16'
Lab Order:	0311174	**Collection Date:**	11/19/2003 1:50:00 PM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-10	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	900	3.0		mg/Kg	10	12/6/2003 3:21:42 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 4:02:14 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 4:02:14 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 4:02:14 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 4:02:14 PM
Surr: 4-Bromofluorobenzene	97.3	74-118		%REC	1	12/1/2003 4:02:14 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-2A: 19-21'
Lab Order: 0311174
Collection Date: 11/19/2003 2:05:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-11
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	870	3.0		mg/Kg	10	12/6/2003 3:55:11 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-2A: 24-26'
Lab Order: 0311174
Collection Date: 11/19/2003 2:20:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-12
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	690	3.0		mg/Kg	10	12/6/2003 4:11:56 PM

Qualifiers:
- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-2A: 29-31'
Lab Order:	0311174	**Collection Date:**	11/19/2003 2:45:00 PM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-13	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	1700	15		mg/Kg	50	12/7/2003 2:19:11 PM

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-2A: 34-36'
Lab Order:	0311174	**Collection Date:**	11/19/2003 3:15:00 PM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-14	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	1000	3.0		mg/Kg	10	12/6/2003 4:45:26 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-3A: 0-2'
Lab Order:	0311174	**Collection Date:**	11/20/2003 8:27:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-15	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	170	3.0		mg/Kg	10	12/6/2003 5:02:10 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 4:32:20 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 4:32:20 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 4:32:20 PM
Xylenes, Total	0.031	0.025		mg/Kg	1	12/1/2003 4:32:20 PM
Surr: 4-Bromofluorobenzene	95.4	74-118		%REC	1	12/1/2003 4:32:20 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-1A: 34-36'
Lab Order: 0311174
Collection Date: 11/19/2003 12:40:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-07
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	2000	15		mg/Kg	50	12/7/2003 1:28:57 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 2:01:44 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 2:01:44 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 2:01:44 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 2:01:44 PM
Surr: 4-Bromofluorobenzene	101	74-118		%REC	1	12/1/2003 2:01:44 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-3A: 4-6'
Lab Order:	0311174	**Collection Date:**	11/20/2003 8:45:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-16	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	3700	30		mg/Kg	100	12/7/2003 2:35:56 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 5:32:35 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 5:32:35 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 5:32:35 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 5:32:35 PM
Surr: 4-Bromofluorobenzene	101	74-118		%REC	1	12/1/2003 5:32:35 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-3A: 9-11'
Lab Order: 0311174
Collection Date: 11/20/2003 9:00:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-17
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	510	3.0		mg/Kg	10	12/6/2003 5:35:40 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 6:02:49 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 6:02:49 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 6:02:49 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 6:02:49 PM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	1	12/1/2003 6:02:49 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-3A: 14-16'
Lab Order:	0311174	**Collection Date:**	11/20/2003 9:15:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-18	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	570	3.0		mg/Kg	10	12/6/2003 5:52:23 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-3A: 19-21'
Lab Order:	0311174	**Collection Date:**	11/20/2003 9:30:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-19	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	880	3.0		mg/Kg	10	12/6/2003 6:25:51 PM

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-3A: 24-26'
Lab Order:	0311174	**Collection Date:**	11/20/2003 9:45:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-20	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	3200	30		mg/Kg	100	12/8/2003 2:21:44 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-3A: 34-36'
Lab Order:	0311174	**Collection Date:**	11/20/2003 10:25:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-21	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	1900	15		mg/Kg	50	12/8/2003 2:38:29 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-4A: 0-2'
Lab Order:	0311174	**Collection Date:**	11/20/2003 11:00:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-22	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	160	3.0		mg/Kg	10	12/6/2003 7:49:32 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 6:32:57 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 6:32:57 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 6:32:57 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 6:32:57 PM
Surr: 4-Bromofluorobenzene	101	74-118		%REC	1	12/1/2003 6:32:57 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-4A: 4-6'
Lab Order: 0311174
Collection Date: 11/20/2003 11:11:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-23
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	800	3.0		mg/Kg	10	12/6/2003 8:06:16 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 7:33:07 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 7:33:07 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 7:33:07 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 7:33:07 PM
Surr: 4-Bromofluorobenzene	99.7	74-118		%REC	1	12/1/2003 7:33:07 PM

Qualifiers:
- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-4A: 9-11'
Lab Order:	0311174	**Collection Date:**	11/20/2003 11:27:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-24	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	2100	15		mg/Kg	50	12/7/2003 3:26:10 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 8:03:17 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 8:03:17 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 8:03:17 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 8:03:17 PM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	1	12/1/2003 8:03:17 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-4A: 14-16'
Lab Order:	0311174	**Collection Date:**	11/20/2003 11:45:00 AM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-25	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	3400	30		mg/Kg	100	12/7/2003 3:42:55 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB-4A: 19-21'
Lab Order: 0311174
Collection Date: 11/20/2003 12:00:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-26
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	4500	30		mg/Kg	100	12/7/2003 4:16:25 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-4A: 24-26'
Lab Order:	0311174	**Collection Date:**	11/20/2003 12:20:00 PM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-27	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	5300	30		mg/Kg	100	12/7/2003 4:33:10 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	New Mexico Salt Water Disposal Co.	**Client Sample ID:**	SB-4A: 29-31'
Lab Order:	0311174	**Collection Date:**	11/20/2003 12:45:00 PM
Project:	NMSWDCo Site Assessment		
Lab ID:	0311174-28	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	3900	30		mg/Kg	100	12/7/2003 4:49:55 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB4A-29-31'
Lab Order: 0311174
Collection Date: 11/20/2003 1:30:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-29
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Chloride	45000	130		mg/L	1250	12/3/2003 8:12:44 PM
EPA METHOD 8260B: VOLATILES						Analyst: BL
Benzene	ND	1.0		µg/L	1	11/24/2003
Toluene	ND	1.0		µg/L	1	11/24/2003
Ethylbenzene	ND	1.0		µg/L	1	11/24/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/24/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/24/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/24/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/24/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/24/2003
Naphthalene	ND	2.0		µg/L	1	11/24/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	11/24/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	11/24/2003
Acetone	26	10		µg/L	1	12/1/2003
Bromobenzene	ND	1.0		µg/L	1	11/24/2003
Bromochloromethane	ND	1.0		µg/L	1	11/24/2003
Bromodichloromethane	ND	1.0		µg/L	1	11/24/2003
Bromoform	ND	1.0		µg/L	1	11/24/2003
Bromomethane	ND	2.0		µg/L	1	11/24/2003
2-Butanone	ND	10		µg/L	1	11/24/2003
Carbon disulfide	ND	10		µg/L	1	11/24/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	11/24/2003
Chlorobenzene	ND	1.0		µg/L	1	11/24/2003
Chloroethane	ND	2.0		µg/L	1	11/24/2003
Chloroform	ND	1.0		µg/L	1	11/24/2003
Chloromethane	ND	1.0		µg/L	1	11/24/2003
2-Chlorotoluene	ND	1.0		µg/L	1	11/24/2003
4-Chlorotoluene	ND	1.0		µg/L	1	11/24/2003
cis-1,2-DCE	ND	1.0		µg/L	1	11/24/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/24/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/24/2003
Dibromochloromethane	ND	1.0		µg/L	1	11/24/2003
Dibromomethane	ND	2.0		µg/L	1	11/24/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/24/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/24/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/24/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/24/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	11/24/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	11/24/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	11/24/2003

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB4A-29-31'
Lab Order: 0311174
Collection Date: 11/20/2003 1:30:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-29
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.0		µg/L	1	11/24/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	11/24/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	11/24/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	11/24/2003
2-Hexanone	ND	10		µg/L	1	11/24/2003
Isopropylbenzene	ND	1.0		µg/L	1	11/24/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	11/24/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	11/24/2003
Methylene Chloride	ND	3.0		µg/L	1	11/24/2003
n-Butylbenzene	ND	1.0		µg/L	1	11/24/2003
n-Propylbenzene	ND	1.0		µg/L	1	11/24/2003
sec-Butylbenzene	ND	1.0		µg/L	1	11/24/2003
Styrene	ND	1.0		µg/L	1	11/24/2003
tert-Butylbenzene	ND	1.0		µg/L	1	11/24/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/24/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	11/24/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/24/2003
trans-1,2-DCE	ND	1.0		µg/L	1	11/24/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/24/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/24/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/24/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/24/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/24/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/24/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	11/24/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/24/2003
Vinyl chloride	ND	2.0		µg/L	1	11/24/2003
Xylenes, Total	ND	1.0		µg/L	1	11/24/2003
Surr: 1,2-Dichloroethane-d4	105	70.6-124		%REC	1	11/24/2003
Surr: 4-Bromofluorobenzene	97.2	76.2-122		%REC	1	11/24/2003
Surr: Dibromofluoromethane	106	67.2-131		%REC	1	11/24/2003
Surr: Toluene-d8	99.9	82.1-123		%REC	1	11/24/2003
EPA METHOD 8310: PAHS						Analyst: GT
Naphthalene	ND	6.3		µg/L	1	12/7/2003 10:29:17 AM
1-Methylnaphthalene	ND	6.3		µg/L	1	12/7/2003 10:29:17 AM
2-Methylnaphthalene	ND	6.3		µg/L	1	12/7/2003 10:29:17 AM
Acenaphthylene	ND	6.3		µg/L	1	12/7/2003 10:29:17 AM
Acenaphthene	ND	6.3		µg/L	1	12/7/2003 10:29:17 AM
Fluorene	ND	2.0		µg/L	1	12/7/2003 10:29:17 AM
Phenanthrene	ND	1.5		µg/L	1	12/7/2003 10:29:17 AM
Anthracene	ND	1.5		µg/L	1	12/7/2003 10:29:17 AM
Fluoranthene	ND	0.75		µg/L	1	12/7/2003 10:29:17 AM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB4A-29-31'
Lab Order: 0311174
Collection Date: 11/20/2003 1:30:00 PM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-29
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Pyrene	ND	0.75		µg/L	1	12/7/2003 10:29:17 AM
Benz(a)anthracene	ND	0.050		µg/L	1	12/7/2003 10:29:17 AM
Chrysene	ND	0.50		µg/L	1	12/7/2003 10:29:17 AM
Benzo(b)fluoranthene	ND	0.13		µg/L	1	12/7/2003 10:29:17 AM
Benzo(k)fluoranthene	ND	0.050		µg/L	1	12/7/2003 10:29:17 AM
Benzo(a)pyrene	ND	0.050		µg/L	1	12/7/2003 10:29:17 AM
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	12/7/2003 10:29:17 AM
Benzo(g,h,i)perylene	ND	0.075		µg/L	1	12/7/2003 10:29:17 AM
Indeno(1,2,3-cd)pyrene	ND	0.20		µg/L	1	12/7/2003 10:29:17 AM
Surr: Benzo(e)pyrene	80.3	54-102		%REC	1	12/7/2003 10:29:17 AM
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	12/4/2003
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.40		mg/L	20	12/3/2003 3:15:07 PM
Barium	0.45	0.040		mg/L	20	12/3/2003 3:15:07 PM
Cadmium	ND	0.040		mg/L	20	12/3/2003 3:15:07 PM
Chromium	ND	0.12		mg/L	20	12/3/2003 3:15:07 PM
Lead	ND	0.10		mg/L	20	12/3/2003 3:15:07 PM
Selenium	ND	0.40		mg/L	20	12/3/2003 3:15:07 PM
Silver	ND	0.10		mg/L	20	12/3/2003 3:15:07 PM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	70000	1.0		mg/L	1	12/1/2003

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Client Sample ID: SB3A: 29-31'
Lab Order: 0311174
Collection Date: 11/20/2003 10:00:00 AM
Project: NMSWDCo Site Assessment
Lab ID: 0311174-30
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: BDH
Chloride	5900	30		mg/Kg	100	12/7/2003 5:06:40 PM
EPA METHOD 418.1: TPH						Analyst: GT
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/25/2003
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/1/2003 8:33:14 PM
Toluene	ND	0.025		mg/Kg	1	12/1/2003 8:33:14 PM
Ethylbenzene	ND	0.025		mg/Kg	1	12/1/2003 8:33:14 PM
Xylenes, Total	ND	0.025		mg/Kg	1	12/1/2003 8:33:14 PM
Surr: 4-Bromofluorobenzene	100	74-118		%REC	1	12/1/2003 8:33:14 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *10-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Method Blank

Sample ID MB	Batch ID: 4782	Test Code: E300	Units: mg/Kg	Analysis Date 12/6/2003 7:16:04 PM	Prep Date
Client ID:		Run ID: LC_031206C		SeqNo: 231376	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.30									

Sample ID MB 120203	Batch ID: R10233	Test Code: E300	Units: mg/L	Analysis Date 12/2/2003 10:04:20 AM	Prep Date
Client ID:		Run ID: LC_031202A		SeqNo: 229713	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.10									

Sample ID MB-B	Batch ID: R10233	Test Code: E300	Units: mg/L	Analysis Date 12/2/2003 11:54:00 PM	Prep Date
Client ID:		Run ID: LC_031202A		SeqNo: 229762	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.10									

Sample ID MB	Batch ID: R10251	Test Code: E300	Units: mg/L	Analysis Date 12/3/2003 5:25:25 PM	Prep Date
Client ID:		Run ID: LC_031203A		SeqNo: 230270	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.10									

Sample ID MB-4719	Batch ID: 4719	Test Code: E418.1	Units: mg/Kg	Analysis Date 11/25/2003	Prep Date 11/24/2003
Client ID:		Run ID: BUCK IR_031125A		SeqNo: 228815	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20									

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Method Blank

Sample ID MB-4720	Batch ID: 4720	Test Code: E418.1	Units: mg/Kg	Analysis Date 11/25/2003	Prep Date 11/24/2003
Client ID:		Run ID: BUCK IR_031125A		SeqNo: 228839	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20									

Sample ID MB-4733	Batch ID: 4733	Test Code: SW8021	Units: mg/Kg	Analysis Date 12/1/2003 10:30:33 AM	Prep Date 11/25/2003
Client ID:		Run ID: PIDFID_031201A		SeqNo: 229459	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.025									
Toluene	ND	0.025									
Ethylbenzene	ND	0.025									
Xylenes, Total	ND	0.025									
Surr: 4-Bromofluorobenzene	0.9825	0	1	0	98.3	74	118	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Method Blank

Sample ID MB-4732 Batch ID: 4732 Test Code: SW8310 Units: µg/L Analysis Date 12/7/2003 7:17:20 AM Prep Date 11/25/2003
Client ID: Run ID: HUGO_031206A SeqNo: 231481

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	2.5									
1-Methylnaphthalene	ND	2.5									
2-Methylnaphthalene	ND	2.5									
Acenaphthylene	ND	2.5									
Acenaphthene	ND	2.5									
Fluorene	ND	0.80									
Phenanthrene	ND	0.60									
Anthracene	ND	0.60									
Fluoranthene	ND	0.30									
Pyrene	ND	0.30									
Benz(a)anthracene	ND	0.020									
Chrysene	ND	0.20									
Benzo(b)fluoranthene	ND	0.050									
Benzo(k)fluoranthene	ND	0.020									
Benzo(a)pyrene	ND	0.020									
Dibenz(a,h)anthracene	ND	0.040									
Benzo(g,h,i)perylene	ND	0.030									
Indeno(1,2,3-cd)pyrene	ND	0.080									
Surr: Benzo(e)pyrene	17.8	0	20	0	89.0	54	102	0			

Sample ID MB-4772 Batch ID: 4772 Test Code: SW7470 Units: mg/L Analysis Date 12/4/2003 Prep Date 12/3/2003
Client ID: Run ID: MI-LA254_031204A SeqNo: 230381

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Method Blank

Sample ID MB-4759 Batch ID: 4759 Test Code: SW6010A Units: mg/L Analysis Date 12/3/2003 1:54:01 PM Prep Date 12/2/2003
Client ID: Run ID: ICP_031203A SeqNo: 230103

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	0.020									
Cadmium	ND	0.0020									
Chromium	ND	0.0060									
Lead	ND	0.0050									
Silver	ND	0.0050									

Sample ID MB-4759 Batch ID: 4759 Test Code: SW6010A Units: mg/L Analysis Date 12/3/2003 1:54:01 PM Prep Date 12/2/2003
Client ID: Run ID: ICP_031203B SeqNo: 230245

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.020									
Barium	ND	0.020									
Cadmium	ND	0.0020									
Chromium	ND	0.0060									
Lead	ND	0.0050									
Selenium	ND	0.020									
Silver	ND	0.0050									

Sample ID MB-4740 Batch ID: 4740 Test Code: E160.1 Units: mg/L Analysis Date 12/1/2003 Prep Date 11/26/2003
Client ID: Run ID: WC_031201A SeqNo: 229356

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *10-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Method Blank

Sample ID 5ml rb | Batch ID: R10188 | Test Code: SW8260B | Units: µg/L | Analysis Date 11/24/2003 | Prep Date
Client ID: | Run ID: THOR_031124A | SeqNo: 228620

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT:	New Mexico Salt Water Disposal Co.
Work Order:	0311174
Project:	NMSWDCo Site Assessment

QC SUMMARY REPORT

Method Blank

cis-1,3-Dichloropropene	ND	1.0
1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT:	New Mexico Salt Water Disposal Co.							
Work Order:	0311174							
Project:	NMSWDCo Site Assessment							

QC SUMMARY REPORT

Method Blank

1,1,2-Trichloroethane	ND	1.0						
Trichloroethene (TCE)	ND	1.0						
Trichlorofluoromethane	ND	1.0						
1,2,3-Trichloropropane	ND	2.0						
Vinyl chloride	ND	2.0						
Xylenes, Total	ND	1.0						
Surr: 1,2-Dichloroethane-d4	10.39	0	10	0	104	68.4	127	0
Surr: 4-Bromofluorobenzene	9.912	0	10	0	99.1	70.4	126	0
Surr: Dibromofluoromethane	10.63	0	10	0	106	70.2	126	0
Surr: Toluene-d8	10.67	0	10	0	107	73.5	129	0

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Method Blank

Sample ID 5ml rb | Batch ID: R10229 | Test Code: SW8260B | Units: µg/L | Analysis Date 12/1/2003 | Prep Date
Client ID: | Run ID: NEPTUNE_031201A | SeqNo: 229633

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit | S - Spike Recovery outside accepted recovery limits | B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits | R - RPD outside accepted recovery limits

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT

Method Blank

1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Method Blank

Trichloroethene (TCE)	ND	1.0						
Trichlorofluoromethane	ND	1.0						
1,2,3-Trichloropropane	ND	2.0						
Vinyl chloride	ND	2.0						
Xylenes, Total	ND	1.0						
Surr: 1,2-Dichloroethane-d4	9.91	0	10	0	99.1	68.4	127	0
Surr: 4-Bromofluorobenzene	9.272	0	10	0	92.7	70.4	126	0
Surr: Dibromofluoromethane	9.462	0	10	0	94.6	70.2	126	0
Surr: Toluene-d8	10.68	0	10	0	107	73.5	129	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *10-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Sample Duplicate

Sample ID 0311174-03B Batch ID: 4774 Test Code: E300 Units: mg/Kg Analysis Date 12/7/2003 2:02:27 PM Prep Date 12/3/2003
Client ID: SB-1A: 14-16' Run ID: LC_031207A SeqNo: 231507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1685	6.0	0	0	0	0	0	1854	9.57	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *10-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0311174-05BMS** Batch ID: **4719** Test Code: **E418.1** Units: **mg/Kg** Analysis Date **11/25/2003** Prep Date **11/24/2003**
Client ID: **SB-1A: 24-26'** Run ID: **BUCK IR_031125A** SeqNo: **228827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	105	20	101	0	104	82	114	0			

Sample ID **0311174-05BMSD** Batch ID: **4719** Test Code: **E418.1** Units: **mg/Kg** Analysis Date **11/25/2003** Prep Date **11/24/2003**
Client ID: **SB-1A: 24-26'** Run ID: **BUCK IR_031125A** SeqNo: **228828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	101	0	99.0	82	114	105	4.88	20	

Sample ID **0311174-04aMS** Batch ID: **4733** Test Code: **SW8021** Units: **mg/Kg** Analysis Date **12/1/2003 9:03:13 PM** Prep Date
Client ID: **SB-1A: 19-21'** Run ID: **PIDFID_031201A** SeqNo: **229477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.123	0.025	1	0	112	77	122	0			
Toluene	1.047	0.025	1	0	105	81	115	0			
Ethylbenzene	1.009	0.025	1	0	101	84	117	0			
Xylenes, Total	3.148	0.025	3	0	105	84	116	0			

Sample ID **0311174-04aMSD** Batch ID: **4733** Test Code: **SW8021** Units: **mg/Kg** Analysis Date **12/1/2003 9:33:19 PM** Prep Date
Client ID: **SB-1A: 19-21'** Run ID: **PIDFID_031201A** SeqNo: **229478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.081	0.025	1	0	108	77	122	1.123	3.80	27	
Toluene	1.01	0.025	1	0	101	81	115	1.047	3.62	19	
Ethylbenzene	1.004	0.025	1	0	100	84	117	1.009	0.566	10	
Xylenes, Total	3.021	0.025	3	0	101	84	116	3.148	4.13	13	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *10-Dec-03*

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT

Laboratory Control Spike - generic

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sample ID LCS Batch ID: **R10233** Test Code: **E300** Units: **mg/L** Analysis Date **12/2/2003 7:42:47 PM** Prep Date											
Client ID: Run ID: **LC_031202A** SeqNo: **229747**											
Chloride	4.602	0.10	5	0	92.0	90	110	0			
Sample ID LCS Batch ID: **R10233** Test Code: **E300** Units: **mg/L** Analysis Date **12/3/2003 12:10:45 AM** Prep Date											
Client ID: Run ID: **LC_031202A** SeqNo: **229763**											
Chloride	4.615	0.10	5	0	92.3	90	110	0			
Sample ID LCS Batch ID: **R10251** Test Code: **E300** Units: **mg/L** Analysis Date **12/3/2003 5:42:09 PM** Prep Date											
Client ID: Run ID: **LC_031203A** SeqNo: **230271**											
Chloride	4.955	0.10	5	0	99.1	90	110	0			
Sample ID LCS-4719 Batch ID: **4719** Test Code: **E418.1** Units: **mg/Kg** Analysis Date **11/25/2003** Prep Date **11/24/2003**											
Client ID: Run ID: **BUCK IR_031125A** SeqNo: **228816**											
Petroleum Hydrocarbons, TR	93	20	101	0	92.1	82	114	0			
Sample ID LCS-4720 Batch ID: **4720** Test Code: **E418.1** Units: **mg/Kg** Analysis Date **11/25/2003** Prep Date **11/24/2003**											
Client ID: Run ID: **BUCK IR_031125A** SeqNo: **228840**											
Petroleum Hydrocarbons, TR	95	20	101	0	94.1	82	114	0			

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

/

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID LCSD-4720 Batch ID: 4720 Test Code: E418.1 Units: mg/Kg Analysis Date 11/25/2003 Prep Date 11/24/2003
Client ID: Run ID: BUCK IR_031125A SeqNo: 228843

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	95	20	101	0	94.1	82	114	95	0	20	

Sample ID 100ng lcs Batch ID: R10188 Test Code: SW8260B Units: µg/L Analysis Date 11/24/2003 Prep Date
Client ID: Run ID: THOR_031124A SeqNo: 228621

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.49	1.0	20	0	92.5	71.2	122	0			
Toluene	18.23	1.0	20	0	91.2	87.7	122	0			
Chlorobenzene	22.65	1.0	20	0	113	85.6	136	0			
1,1-Dichloroethene	16.68	1.0	20	0	83.4	70.7	117	0			
Trichloroethene (TCE)	18.11	1.0	20	0	90.6	76.9	130	0			

Sample ID 100ng lcs Batch ID: R10229 Test Code: SW8260B Units: µg/L Analysis Date 12/1/2003 Prep Date
Client ID: Run ID: NEPTUNE_031201A SeqNo: 229634

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.73	1.0	20	0	93.6	71.2	122	0			
Toluene	19.22	1.0	20	0	96.1	87.7	122	0			
Chlorobenzene	19.03	1.0	20	0	95.2	85.6	136	0			
1,1-Dichloroethene	16.48	1.0	20	0	82.4	70.7	117	0			
Trichloroethene (TCE)	19.22	1.0	20	0	96.1	76.9	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID LCS-4732 Batch ID: 4732 Test Code: SW8310 Units: µg/L Analysis Date 12/7/2003 8:05:20 AM Prep Date 11/25/2003
Client ID: Run ID: HUGO_031206A SeqNo: 231482

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	21.53	2.5	40	0	53.8	21.7	60.8	0			
1-Methylnaphthalene	21.07	2.5	40.1	0	52.5	22.7	61.7	0			
2-Methylnaphthalene	21.25	2.5	40	0	53.1	20.8	61.5	0			
Acenaphthylene	19.27	2.5	40.1	0	48.0	27.4	58	0			
Acenaphthene	22.16	2.5	40	0	55.4	28.4	66.2	0			
Fluorene	2.35	0.80	4.01	0	58.6	33	67.5	0			
Phenanthrene	1.1	0.60	2.01	0	54.7	39.4	75.6	0			
Anthracene	1.31	0.60	2.01	0	65.2	42.9	77.8	0			
Fluoranthene	2.6	0.30	4.01	0	64.8	54.1	81.8	0			
Pyrene	2.66	0.30	4.01	0	66.3	51.5	89.4	0			
Benz(a)anthracene	0.31	0.020	0.401	0	77.3	63.3	95.9	0			
Chrysene	1.45	0.20	2.01	0	72.1	63.4	93.8	0			
Benzo(b)fluoranthene	0.4	0.050	0.501	0	79.8	70.5	103	0			
Benzo(k)fluoranthene	0.21	0.020	0.25	0	84.0	71.3	102	0			
Benzo(a)pyrene	0.22	0.020	0.251	0	87.6	71.6	105	0			
Dibenz(a,h)anthracene	0.46	0.040	0.501	0	91.8	73.6	108	0			
Benzo(g,h,i)perylene	0.43	0.030	0.5	0	86.0	70.8	114	0			
Indeno(1,2,3-cd)pyrene	0.93	0.080	1.002	0	92.8	76.6	107	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID LCSD-4732 Batch ID: 4732 Test Code: SW8310 Units: µg/L Analysis Date 12/7/2003 9:41:19 AM Prep Date 11/25/2003
Client ID: Run ID: HUGO_031206A SeqNo: 231484

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	20.35	2.5	40	0	50.9	21.7	60.8	21.53	5.64	32.1	
1-Methylnaphthalene	20.23	2.5	40.1	0	50.4	22.7	61.7	21.07	4.07	32.7	
2-Methylnaphthalene	20.32	2.5	40	0	50.8	20.8	61.5	21.25	4.47	34	
Acenaphthylene	19.32	2.5	40.1	0	48.2	27.4	58	19.27	0.259	38.8	
Acenaphthene	21.61	2.5	40	0	54.0	28.4	66.2	22.16	2.51	38.6	
Fluorene	2.31	0.80	4.01	0	57.6	33	67.5	2.35	1.72	39.3	
Phenanthrene	1.09	0.60	2.01	0	54.2	39.4	75.6	1.1	0.913	25	
Anthracene	1.31	0.60	2.01	0	65.2	42.9	77.8	1.31	0	23.9	
Fluoranthene	2.59	0.30	4.01	0	64.6	54.1	81.8	2.6	0.385	15.7	
Pyrene	2.59	0.30	4.01	0	64.6	51.5	89.4	2.66	2.67	15.3	
Benz(a)anthracene	0.3	0.020	0.401	0	74.8	63.3	95.9	0.31	3.28	119	
Chrysene	1.51	0.20	2.01	0	75.1	63.4	93.8	1.45	4.05	16.6	
Benzo(b)fluoranthene	0.4	0.050	0.501	0	79.8	70.5	103	0.4	0	21.7	
Benzo(k)fluoranthene	0.21	0.020	0.25	0	84.0	71.3	102	0.21	0	19.4	
Benzo(a)pyrene	0.22	0.020	0.251	0	87.6	71.6	105	0.22	0	16.7	
Dibenz(a,h)anthracene	0.45	0.040	0.501	0	89.8	73.6	108	0.46	2.20	17.3	
Benzo(g,h,i)perylene	0.42	0.030	0.5	0	84.0	70.8	114	0.43	2.35	118	
Indeno(1,2,3-cd)pyrene	0.897	0.080	1.002	0	89.5	76.6	107	0.93	3.61	17.7	

Sample ID LCS-4772 Batch ID: 4772 Test Code: SW7470 Units: mg/L Analysis Date 12/4/2003 Prep Date 12/3/2003
Client ID: Run ID: MI-LA254_031204A SeqNo: 230382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004491	0.00020	0.005	0	89.8	75.2	134	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID LCSD-4772 Batch ID: 4772 Test Code: SW7470 Units: mg/L Analysis Date 12/4/2003 Prep Date 12/3/2003
Client ID: Run ID: MI-LA254_031204A SeqNo: 230383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005345	0.00020	0.005	0	107	75.2	134	0.004491	17.4	0	

Sample ID LCS-4759 Batch ID: 4759 Test Code: SW6010A Units: mg/L Analysis Date 12/3/2003 1:57:54 PM Prep Date 12/2/2003
Client ID: Run ID: ICP_031203A SeqNo: 230104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.4798	0.020	0.5	0	96.0	80	120	0			
Cadmium	0.4789	0.0020	0.5	0	95.8	80	120	0			
Chromium	0.4938	0.0060	0.5	0	98.8	80	120	0			
Lead	0.476	0.0050	0.5	0	95.2	80	120	0			
Silver	0.4891	0.0050	0.5	0	97.8	80	120	0			

Sample ID LCSD-4759 Batch ID: 4759 Test Code: SW6010A Units: mg/L Analysis Date 12/3/2003 2:01:46 PM Prep Date 12/2/2003
Client ID: Run ID: ICP_031203A SeqNo: 230105

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.4831	0.020	0.5	0	96.6	80	120	0.4798	0.677	20	
Cadmium	0.484	0.0020	0.5	0	96.8	80	120	0.4789	1.05	20	
Chromium	0.4985	0.0060	0.5	0	99.7	80	120	0.4938	0.950	20	
Lead	0.4666	0.0050	0.5	0	93.3	80	120	0.476	2.01	20	
Silver	0.4945	0.0050	0.5	0	98.9	80	120	0.4891	1.08	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: New Mexico Salt Water Disposal Co.
Work Order: 0311174
Project: NMSWDCo Site Assessment

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID LCS-4759 Batch ID: 4759 Test Code: SW6010A Units: mg/L Analysis Date 12/3/2003 1:57:54 PM Prep Date 12/2/2003
Client ID: Run ID: ICP_031203B SeqNo: 230246

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4957	0.020	0.5	0	99.1	80	120	0			
Barium	0.4798	0.020	0.5	0	96.0	80	120	0			
Cadmium	0.4789	0.0020	0.5	0	95.8	80	120	0			
Chromium	0.4938	0.0060	0.5	0	98.8	80	120	0			
Lead	0.476	0.0050	0.5	0	95.2	80	120	0			
Selenium	0.5228	0.020	0.5	0	105	80	120	0			
Silver	0.4891	0.0050	0.5	0	97.8	80	120	0			

Sample ID LCSD-4759 Batch ID: 4759 Test Code: SW6010A Units: mg/L Analysis Date 12/3/2003 2:01:46 PM Prep Date 12/2/2003
Client ID: Run ID: ICP_031203B SeqNo: 230247

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4857	0.020	0.5	0	97.1	80	120	0.4957	2.05	20	
Barium	0.4831	0.020	0.5	0	96.6	80	120	0.4798	0.677	20	
Cadmium	0.484	0.0020	0.5	0	96.8	80	120	0.4789	1.05	20	
Chromium	0.4985	0.0060	0.5	0	99.7	80	120	0.4938	0.950	20	
Lead	0.4666	0.0050	0.5	0	93.3	80	120	0.476	2.01	20	
Selenium	0.523	0.020	0.5	0	105	80	120	0.5228	0.0307	20	
Silver	0.4945	0.0050	0.5	0	98.9	80	120	0.4891	1.08	20	

Sample ID LCS-4740 Batch ID: 4740 Test Code: E160.1 Units: mg/L Analysis Date 12/1/2003 Prep Date 11/26/2003
Client ID: Run ID: WC_031201A SeqNo: 229357

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	1002	1.0	1000	0	100	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

PAGE 1 OF 5

CHAIN-OF-CUSTODY RECORD

Accreditation Applied: NELAC ☐ USACE ☐ Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: New Mexico Salt Water Disposal Co., Inc.
Address: ATTN: John Maxey, Jr. PO Box 1518 Roswell, NM 88202-1518
Phone #: 505-622-3770
Fax #: 505-625-0266

Project Name: NMSWDCo Site Assessment
Project #: MSA NMSWDCo. NW/NW Section 21 T10S R34E Lea Co. NM
Project Manager: John Maxey, Jr.
Sampler: CM Ballantyne, PE.
Sample Temperature: 4°C

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: None	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles or Headspace (Y or N)
11/19/03	0900	Soil	SB-1A: 0'-2'	2x4oz+1G Jars			X	0311174-1	X			X					X							N/A
11/19/03	1037	Soil	SB-1A: 9'-11'	" "			X	-2	X			X					X							"
11/19/03	1105	Soil	SB-1A: 14'-16'	" "			X	-3	X			X					X							"
11/19/03	1120	Soil	SB-1A: 19'-21'	" "			X	-4	X			X					X							"
11/19/03	1136	Soil	SB-1A: 24'-26'	" "			X	-5	X			X					X							"
11/19/03	1154	Soil	SB-1A: 29'-31'	" "			X	-6	X			X					X							"
11/19/03	1240	Soil	SB-1A: 34'-36'	" "			X	-7	X			X					X							"
11/19/03	1320	Soil	SB-2A: 0'-2'	" "			X	-8	X			X					X							"
11/19/03	1336	Soil	SB-2A: 9'-11'	" "			X	-9	X			X					X							"
11/19/03	1350	Soil	SB-2A: 14'-16'	" "			X	-10	X			X					X							"
11/19/03	14:25	Soil	SB-2A - 19'-21'	" "			X	-11									X							"
11/19/03	14:20	Soil	SB-2A: 24'-26'	" "			X	-12									X							"

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
11/21/03	0940			11/21/03 1:40
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

Remarks: Bill NMSWDCo. Directly For Analysis Costs; Please Send Copy of Results to: Cmbenvirce@hn.com
Please note: Some Samples Chloride analysis Anal.

CHAIN-OF-CUSTODY RECORD

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Client: New Mexico Salt Water Disposal Co.

Address: ATTN: John Maxey, Jr. PO Box 1518 Roswell, NM 88202-1518

Phone #: 505-622-3770 505-625-0266

Fax #: 505-622-8643

Project Name: NMSWDCo - Site Assessment

Project #: MSA NMSWDCo. NW/NW Section 21 T10S R34E Lea Co. NM

Project Manager: John Maxey, Jr.

Sampler: CM Barnhill, PG.

Samples Cold?: ☐ Yes ☐ No

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative			HEAL No.
					$HgCl_2$	HCl	None	
11/19/03	1445	Soil	SB-2A : 29'-31'	2x4oz/6 Jars			X	0311174-13
11/19/03	15:15	Soil	SB-2A : 34'-36'	" "			X	-14
11/20/03	0827	Soil	SB-3A : 0'-2'	" "			X	-15
11/20/03	0845	Soil	SB-3A 4'-6'	" "			X	-16
11/20/03	900	Soil	SB-3A : 9'-11'	" "			X	-17
11/20/03	0915	Soil	SB-3A : 14'-16'	" "			X	-18
11/20/03	0930	Soil	SB-3A : 19'-21'	" "			X	-19
11/20/03	0945	Soil	SB-3A : 24'-26'	" "			X	-20
11/20/03	10:25	Soil	SB-3A : ~~32'-34'~~ 34'-36' + TPH	1x4oz Jar/No Pres.			X	-21
11/20/03	11:00	Soil	SB4A - 0'-2'	2x4oz 6/Jars			X	-22
11/20/03	11:11	Soil	SB4A : 4'-6'	" "			X	-23
11/20/03	11:27	Soil	SB 4A : 9'-11'	" "			X	-24

ANALYSIS REQUEST

BTEX + MTBE + TMBs (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B MOD (Gas/Diesel)	TPH (Method 418.1)	Volatiles Full List (8021)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260 (VOA)	8270 (Semi-VOA)			Air Bubbles or Headspace (Y or N)
X			X							X						
X			X							X						
X			X							X						
X			X							X						
X			X							X						
										X						
										X						
										X						
										X						
X			X							X						
X			X							X						
X			X							X						

Date: 11/21/03 Time: 0440 Relinquished By: (Signature) Received By: (Signature) 11/21/03 3:40

Date: Time: Relinquished By: (Signature) Received By: (Signature)

Remarks: Bill NMSWDCo Directly For Analysis Cost. Please Send Copy of Results to cmbenvironmental.com.

* Please Note: Some Samples Chloride Analysis Only.

CHAIN-OF-CUSTODY RECORD

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Client: New Mexico Salt Water Disposal Company
Address: ATTN: John Maxey, Jr. PO Box 1518
Roswell, NM 88202-1518
505-622-3770
Phone #: 505-625-0266
Fax #: 505-622-8643

Project Name: NMSWDC. Site Assessment.
Project #: MSA NMSWDC. NW/NW Section 21 T.16 S. R.34E. Lea Co, NM
Project Manager: John Maxey, Jr.
Sampler: Cal Bankin, PG.
Samples Cold?: ☐ Yes ☐ No

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HCl	Preservative: None	HEAL No.
11/20/03	11:45	Soil	SB4A: 14'-16'	2x4oz/6 Jars			X	0311174-25
11/20/03	12:00	Soil	SB4A: 19'-21'	" "			X	-26
11/20/03	12:20	Soil	SB4A: 24'-26'	" "			X	-27
11/20/03	12:45	Soil	SB4A: 29'-31'	" "			X	-28
11/20/03	13:30	H_2O	SB4A - 29-31'	1x500mL/P 3x40mL VOAs	X		X	-29
11/20/03	10:00	Soil	SB3A: 29-31'	1x1Liter/A/G 2-40				-30

Date	Time	Relinquished By: (Signature)	Received By: (Signature)	
11/21/03	0440			11/21/03 3:40
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

ANALYSIS REQUEST

	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B MOD (Gas/Diesel)	TPH (Method 418.1)	Volatiles Full List (8021)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260 (VOA)	8270 (Semi-VOA)	T.D.S.		Air Bubbles or Headspace (Y or N)
11/20/03											X						
11/20/03											X						
11/20/03											X						
11/20/03											X						
11/20/03								X	X		X		X	X	X		
11/20/03	X			X							X						

Remarks: Bill NMSWDC Directly For Analysis Post. Please Send Copy of Results To Cabenvirodfw.com

Analyze the 8270 sample * for 8310 instead 4 11/25

Please note: Some samples above analysis only.

December 29, 2003

Clayton M. Barnhill, PG
Project Manager
CMB Environmental & Geological Services, Inc.
PO Box 2304
Roswell, NM 88202-2304
(505) 622-2012

Dear Mr. Barnhill:

Enclosed is the final report for the NMSWDCo - SB-3A job. Please review this report and provide any comments as samples will be held for a maximum of 30 days. After 30 days samples will be returned or disposed of in an appropriate manner.

All testing results were evaluated subjectively for consistency and reasonableness, and the results appear to be reasonably representative of the material tested. However, DBS&A does not assume any responsibility for interpretations or analyses based on the data enclosed, nor can we guarantee that these data are fully representative of the undisturbed materials at the field site. We recommend that careful evaluation of these laboratory results be made for your particular application.

We are pleased to provide this service to CDM and look forward to future laboratory testing on other projects. If you have any questions about the enclosed data, please do not hesitate to call.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

Daniel O'Dowd
Enclosure

Daniel B. Stephens & Associates, Inc.
6020 Academy NE, Suite 100 505-822-9400
Albuquerque, NM 87109 FAX 505-822-8877

Summary of Tests Performed

Laboratory Sample Number	Initial Soil Properties[1] (θ, ρ_d, ϕ)	Saturated Hydraulic Conductivity[2]		Moisture Characteristics[3]					Unsaturated Hydraulic Conductivity	Particle Size[4]			Effective Porosity	TOC	Air Permeability	1/3, 15 Bar Points and Water Holding Capacity	Atterberg Limits	Proctor Compaction
		CH	FH	HC	PP	TH	WP	RH		DS	WS	H						
SB-3A (34-36)	X		X										X	X				

[1] θ = Initial moisture content, ρ_d = Dry bulk density, ϕ = Calculated porosity

[2] CH = Constant head, FH = falling head

[3] HC = Hanging column, PP = Pressure plate, TH = Thermocouple psychrometer, WP = Water activity meter, RH = Relative humidity box

[4] DS = Dry sieve, WS = Wet sieve, H = Hydrometer

Summary of Initial Moisture Content, Dry Bulk Density Wet Bulk Density and Calculated Porosity

Sample Number	Initial Moisture Content		Dry Bulk Density	Wet Bulk Density	Calculated Porosity
	Gravimetric (%, g/g)	Volumetric (%, cm^3/cm^3)	(g/cm^3)	(g/cm^3)	(%)
SB-3A (34-36)	14.1	26.9	1.90	2.17	28.3

Summary of Saturated Hydraulic Conductivity Tests

Sample Number	K_{sat} (cm/sec)	Intrinsic Permeability (cm^2)	Method of Analysis	
			Constant Head	Falling Head
SB3A (34-36)	1.5E-08	1.5E-13		X

Summary of Effective Porosity Tests

Sample Number	Effective Porosity (% cm^3/cm^3)
SB-3A (34-36)	5.5

Summary of Total Organic Carbon Tests

Sample Number	Fraction Organic Carbon (%)
SB3A (34-36)	*ND

*ND--Not detectable at reporting limit. See data sheets.

Analysis provided by Hall Environmental, Albuquerque, NM.

Raw Laboratory Data and Graphical Plots

Summary of Initial Moisture Content, Dry Bulk Density Wet Bulk Density and Calculated Porosity

Sample Number	Initial Moisture Content		Dry Bulk Density	Wet Bulk Density	Calculated Porosity
	Gravimetric (%, g/g)	Volumetric (%, cm^3/cm^3)	(g/cm^3)	(g/cm^3)	(%)
SB-3A (34-36)	14.1	26.9	1.90	2.17	28.3

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: CMB-NMSWDCo
Job Number: WR03.0249.00
Sample Number: SB-3A (34-36)
Ring Number: NA
Depth: NA
Test Date: 3-Dec-03

Field weight of sample* (g): 88.66
Tare weight, ring (g): 21.89
Tare weight, cap/plate/epoxy (g): 0.00

Dry weight of sample (g): 58.50
Sample volume (cm^3): 30.79
Assumed particle density: 2.65

Initial Volumetric Moisture Content (% vol): 26.9
Initial Gravimetric Moisture Content (% g/g): 14.1
Dry bulk density (g/cm^3): 1.90
Wet bulk density (g/cm^3): 2.17
Calculated Porosity (% vol): 28.3
Percent Saturation: 94.9

Comments:

* Weight including tares

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: R. Smith

Summary of Saturated Hydraulic Conductivity Tests

Sample Number	K_{sat} (cm/sec)	Intrinsic Permeability (cm^2)	Method of Analysis	
			Constant Head	Falling Head
SB3A (34-36)	1.5E-08	1.5E-13		X

Saturated Hydraulic Conductivity
Falling Head Method

Job name: CMB-NMSWDCo
Job number: WR03.0249.00
Sample number: SB-3A (34-36)
Ring number: NA
Depth: NA

Type of water used: TAP
Backpressure (psi): 2.5
Offset (cm): 1.1
Sample length (cm): 2.94
Sample x-sectional area (cm^2): 10.47
Reservoir x-sectional area (cm^2): 0.70

Date	Time	Temp (°C)	Reservoir head (cm)	Corrected head (cm)	Elapsed time (sec)	Ksat (cm/sec)	Ksat @ 20°C (cm/sec)
Test # 1:							
08-Dec-03	10:19:35	19.0	112.3	287.0	19149	2.0E-08	2.0E-08
08-Dec-03	15:38:44	19.0	111.8	286.4			
Test # 2:							
08-Dec-03	15:38:44	19.0	111.8	286.4	67303	1.1E-08	1.1E-08
09-Dec-03	10:20:27	19.5	110.7	285.3			
Test # 3:							
09-Dec-03	10:20:27	19.5	110.7	285.3	105018	1.3E-08	1.3E-08
10-Dec-03	15:30:45	19.5	108.7	283.3			

***Average Ksat* (cm/sec):** **1.5E-08**

Comments:

Laboratory analysis by: J. Hines
Data entered by: D. O'Dowd
Checked by: D. O'Dowd

Summary of Effective Porosity Tests

Sample Number	Effective Porosity (% cm^3/cm^3)
SB-3A (34-36)	5.5

Effective Porosity Data

Job Name: CMB-NMSWDCo
Job Number: WR03.0249.00
Sample Number: SB-3A (34-36)
Ring Number: NA
Depth: NA

Test Date: 10-Dec-03

*Sample Dry Weight** (g): 136.22
Tare Weight (g): 114.91

Bulk Density (g/cm^3): 1.90
Calculated Porosity (% cm^3/cm^3): 28.3

Test 1		**Test 2**	
Thermocouple potential (-bars):	14.4	*Thermocouple potential (-bars):*	16.4
Sample weight at -14.4 bars (g):*	139.0	*Sample weight* at -16.4 bars (g):*	138.3
Moisture content (% g/g):	13.0	*Moisture content* (% g/g):	9.6
Moisture content (% cm^3/cm^3):	24.8	*Moisture content* (% cm^3/cm^3):	18.2
Matric potential (-cm):	14,685	*Matric potential* (-cm):	16,725

***Moisture content at -15 bars* (% cm^3/cm^3): 22.8**

***Effective porosity* (% cm^3/cm^3): 5.5**

Comments:

* Weight including tares

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: D. O'Dowd

Summary of Total Organic Carbon Tests

Sample Number	Fraction Organic Carbon (%)
SB3A (34-36)	*ND

*ND--Not detectable at reporting limit. See data sheets.

Analysis provided by Hall Environmental, Albuquerque, NM.

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT:	Daniel B. Stephens & Assoc.	**Client Sample ID:**	SB3A (34-36)
Lab Order:	0312028	**Tag Number:**	
Project:	CMB	**Collection Date:**	12/3/2003 10:00:00 AM
Lab ID:	0312028-01A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOC BY WALKLEY BLACK						Analyst: **IC**
TOC	ND	0.10		% C	1	12/26/2003

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *26-Dec-03*

CLIENT: Daniel B. Stephens & Assoc.
Work Order: 0312028
Project: CMB

QC SUMMARY REPORT

Method Blank

Sample ID **MB** Batch ID: **R10479** Test Code: **Walkley Blac** Units: **% C** Analysis Date **12/26/2003** Prep Date

Client ID: Run ID: **WC_031226A** SeqNo: **237506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TOC	ND	0.10									

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Daniel B. Stephens & Assoc.
Work Order: 0312028
Project: CMB

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **LCS** Batch ID: **R10479** Test Code: **Walkley Blac** Units: **% C** Analysis Date **12/26/2003** Prep Date

Client ID: Run ID: **WC_031226A** SeqNo: **237511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
FOC	2.22	0.10	2	0	111	80	120	0			

Sample ID **LCS** Batch ID: **R10479** Test Code: **Walkley Blac** Units: **% C** Analysis Date **12/26/2003** Prep Date

Client ID: Run ID: **WC_031226A** SeqNo: **237507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TOC	2.89	0.10	2.6	0	111	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Laboratory Tests and Methods

Methods for Geotechnical samples

Dry Bulk Density:	ASTM D 4531-91
Moisture Content:	ASTM D 2216-92
Calculated Porosity	Klute, A. 1986. Porosty. Chp.18-2.1, pp. 444-445, in A. Klute (ed.), Methods of Soil Analysis, American Society of Agronomy, Madison, WI
Intrinsic permeability:	Fetter, C. W. 1994, P.96, Applied Hydrogeology, 3rd ed, Printice Hall
Ksat:	
Falling Head:	Klute, A. and C. Dirkson. 1986. Hydraulic Conductivity and Diffusivity: Laboratory Methods. Chp. 28, pp. 200-203, in A. Klute (ed.), Methods of Soil Analysis, American Society of Agronomy, Madison, Wi
Effective Porosity:	Corey, A. T. 1986 Chp. 2.3.3, pp. 40-42, in A. T. Corey, Mechanics of Immiscible Fluids in Porous Media, Book Crafters, Inc., Chelsea, Michigan, U.S.A.
TOC:	Page, A. L. 1982 Chp. 19-3, pp. 570-571, in A. L. Page (ed), Methods of Soil Analysis American Society of Agronomy, Madison, WI